



"The mathematics news"

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# “The mathematics news”

ETHEL M. TURNER, *State Teachers College, Cheyney, Pennsylvania,*  
*has written this play in a style which should make it effective.*  
*It will be welcomed by junior and senior high-school teachers*  
*who are looking for a live assembly program.*

(A play adaptable for junior and senior high-school and college groups.)

**TIME FOR THE PLAY:** Forty minutes.

**PURPOSE:** Many students come to their high-school or college mathematics classes feeling that it is merely a “required must,” of little real value, and of even less interest. These ideas handicap students of good, as well as those of limited, ability and preparation. It also lowers the prestige, worth, and power that the field offers. To help overcome this situation, this play was developed with college freshmen.

**METHOD:** All during the year, students were encouraged to bring in mathematical news clippings and cartoons. These were used as bases for brief discussions on Monday mornings, for class-work correlation, and for the departmental bulletin board in the hall. When many items had been gathered, and great interest aroused, the students were eager for others to hear some of the learnings. To spread the news, they decided to make a large newspaper and to have characters representing each page tell or illustrate their news items in brief speeches or skits. Each participant was given one minute to present the most interesting of his news items.

**MATERIALS:** Programs for audience, one armful of newspapers, model snowflake, a large leaf, sea shells, twelve-foot length of rope, camera, yardstick, ticker tape,

large model stock quotation, giant-size newspaper. The latter can be made by students as follows: Large sheets of white shelf-paper, glued together to the size desired, are thumbtacked on to thin strips of wood molding made into a framework for each page. The frames may be punctured and wired to a pole or broomstick handle, so they can be turned as pages when necessary.

**SUGGESTIONS FOR ILLUSTRATING “The Mathematics News”:**

*Page one,* Name “Headlines,” with a few smaller key words underneath, of topics current in interest and having some mathematical flavor.

*Page two,* “Special Features,” with pictures of atomic circles, a bridge, a building, a formula that is useful in life and understood by students.

*Page three,* “Who’s Who,” pictures with names underneath, such as Newton, Maria Agnesi, Napoleon, Omar Khayyam, Descartes, Florence Nightingale, Einstein, Lewis Carroll, Queen Elizabeth.

*Page four,* A large financial graph showing stock trends.

*Page five,* A large laughing clown face.

*Page six,* School letters in proper colors. Pictures of a football game, a basketball game, an archer, and a runner.

*Page seven,* “Editorial,” with picture of geometric figures, numerals, abacus, etc.

**CAST OF CHARACTERS (as they appear):**

Mistress of Ceremonies

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Newsboy  
 Girl  
 Carriers of Giant Newspaper  
 Front-page Speakers  
 Speakers, Page Two, "Special Features"  
 Group A. Mathematics and Science  
 Group B. Mathematics in Art and Architecture  
 Group C. History of Mathematics  
 Group D. Inquiring Photographer  
 Speakers for Society Page  
 Speakers for Financial Page  
 Actors for Comic Page  
 Speaker for Sports Page  
 Speaker for Editorial Page  
 Newsboy and Girl  
 Entire Cast—Song Finale

#### THE PLAY

MISTRESS OF CEREMONIES (*Enters to introduce play*): The Department of Mathematics brings you today a special edition of its paper, "The Mathematics News." It contains the regular sections of all good papers, such as front-page news of importance, special features, a society page, financial news, comics, a sports section, and an editorial page. So come, join us as we read "The Mathematics News." We will not bore nor confuse you with abstract, technical terms. You will understand all we say. We hope you will hear and see some things you will enjoy, and that you will take some of them away with you. (*She leaves stage.*)

NEWSBOY (*Enters, carrying bundle of newspapers*): Extra! Extra! Read all about it. "The Mathematics News!" Get your mathematics in the News. (*Walks to center of stage.*)

GIRL (*Enters*): What's that you're selling?  
 A mathematics newspaper?

NEWSBOY: Yes, Miss. Have a copy!  
 Latest edition. (*He offers her one of his papers.*)

GIRL: Ha! Ha! Ha! Whoever heard of a mathematics paper? Do you really think

anybody wants to buy a paper full of just counting and dry figures?

NEWSBOY: If that's all you think mathematics is, you're so wrong! There's so much more to it than counting. It has plenty of interesting topics.

GIRL: I'd like to know what they are.

NEWSBOY (*Looking at his watch*): I have a little extra time. This issue is a special anniversary edition. I'll show you some of its features. If you don't like it, you don't have to buy it.

(*Newsboy and girl sit on chairs at side front of stage.*)

Three boys enter carrying giant newspaper, which is closed, having only front page visible. They stand at center back of stage, holding paper.

Four "front-page speakers" enter, who range themselves on both sides of paper. They take turns giving one-minute speeches, motioning toward paper, but looking at audience, speaking on headlines that are current topics whenever the play is given. The original talks were:

1. New Census Being Taken
2. Statistics on Accidents in the Home
3. Radar Now Used to Catch Speeders
4. Tomorrow is Income Tax Deadline

When the last of the four finishes his talk, they all leave the stage. Meanwhile, the book-carriers turn over the front page, so that pages two and three are visible.

"Page Two (Group A) speakers" enter. Leader announces, "Page Two—Special Features." He and his group each give a talk on such topics as formulas, the atom, and mathematics in medicine. The latter concerned the part calculus played in blood-poisoning control at Johns Hopkins Hospital. They then leave stage.

"Page Two speakers" (Group B, a boy and girl) enter. The girl holds up to view a sea shell and leaf, as she talks on "Mathematics in Nature." The boy then points to bridge drawn on Page Two and talks on "Mathematics in Architecture." They leave stage.

Page Two (Group C) enters. Leader talks about "The Ancient Egyptian Rope Stretchers." His three assistants illustrate making a 3'-4'-5' right triangle with a length of rope. One of the group next tells a short history of "Magic Squares." Group then leaves.

The "Inquiring Photographer," Leader of Group D, enters. He interviews, then photographs each arriving member of his group on the question for the day, a current topic, "How does the devaluation of the British pound affect the United States?" This little skit can be done both humorously and effectively by using the following suggestions:

- No. 1. A man knows nothing on the topic, but is interested.
- No. 2. A person who thinks photographer is a fake.
- No. 3. A fat woman, knowing only avoirdupois weight for meaning of a "pound," but loves having her picture taken.
- No. 4. An intelligent citizen who knows and tells correct answer briefly.

End of Page Two. The photographer leaves the stage.

"Page Three group" enters.

LEADER: "Society Page" historians have told us much about the people our paper spotlights this week, but, somehow, few writers have let us know that these people were connected with mathematics. What you hear now are true facts.

Each member of group gives the usual historical connection about each of the following, plus the following facts:

- A. Omar Khayyam contributed to development of algebra in Arabia.
- B. Napoleon was fond of having his engineers work geometric problems. One, called "Napoleon's Problem," was to construct a square with a compass.
- C. Maria Agnesi was a nun who made many mathematical discoveries. One geometric curve, called "The Witch of Agnesi," bears her name.

D. Descartes was accomplished in both philosophy and mathematics.

E. Lewis Carroll was a university instructor in mathematics and wrote scholarly mathematical treatises, as well as *Alice in Wonderland*.

"Page Three group" leaves the stage.

"Page Four group" (2 members) enters; one carries stock ticker tape, the other a large stock quotation. One member introduces the page, tells how the class studied financial page, then explains ticker tape. Other member explains his enlarged stock quotation, and closes with a few "Tips to Amateur Investors." They leave the stage.

"Page Five group" enters, one member announcing "The Comic Page." This group acted out short skits from cartoons donated by students. Following are examples:

- A. Talkative, but "illiterate" group could not count. Finally, one "bright" member solved the problem with "1, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King."
- B. After others had missed it, one member guessed another's age correctly. When asked how he guessed it, he said, "My brother is 22, he's only half as crazy as you, so that makes you 44."
- C. One member claims to be a poet. As he reads a poem, two other comics, one tall, one short, act the poem in pantomime. The poem is "The Big Silver Dollar and the Little Brown Cent."

POEM

The big silver dollar and the little  
brown cent  
Met one day, and a-walking went.  
Said the big silver dollar, "I'm big,  
not small,  
You're just a little thing, nothing at  
all.

"Look at my motto, 'In God we  
trust,'"  
You're so cheap you're almost a  
'bust,"'

Look at my coat, so shiny and loud,  
And I'm worth a hundred of your  
cheap crowd."

"I know," said the Cent, "I'm called  
just a mite;  
I'm not very big and not very bright,  
But you're not so good, and I'll tell  
you why,  
You don't go to church as often as  
I."

Anonymous

D. Last act of "The Comic Page"—  
The squelching of a talkative fellow  
by one of his companions, who holds  
a yardstick and says, "He who  
thinketh by the inch and talketh by  
the yard should be kicketh by the  
foot." Then the latter playfully  
"boots" away the talkative one, and  
all the group leave the stage.

The carriers of paper turn another page.

One student enters, the "Sports Editor," who represents Page Six, the Sports Page. He gives a résumé of the school's athletic activities for the year, some in statistical form, such as averages; mentions some outstanding games and athletes to rally school spirit. He leaves stage.

One student enters, representing Page Seven as the "Editor." Saying "The Editor speaks," he summarizes the play thus:

"The theme of our newspaper is that mathematics can be an interesting subject, with both practical and cultural values. We use it as a tool to help us on to better living. We apply its laws not only in class exercises, but also in real problems, some even here on our own campus. For instance, when we studied trapezoids, we found that our own college farm's cow pasture has that shape. When we studied areas and perimeters, we measured and laid out our own athletic fields. We were surprised to find that the fence around our football field cost over \$7000, but decided it was a good investment for the additional revenue it would bring the school through admission charges.

"These problems bring to mind the fact that mathematics is not only counting, which we call the quantitative aspect. It is also the development of systematic and logical thinking, and weighing facts, called the qualitative aspect. One author has said that mathematics is the science of drawing conclusions. Whatever you think it is, we know that everybody, the world over, uses it. There is a fascinating history behind it, and an increasingly important future ahead of it. It will help you not only to live better, but also to enjoy life more and more. Keep on the look-out for mathematics at work, at play, in and out of doors. Take up our borrowed slogan, 'Look sharp, feel sharp, be sharp.' Your mathematics will then become more than a chore, a pleasure as well as a help."

As the Editor finishes speaking, he moves to one side of the stage.

Newsboy and Girl rise and come to center of stage. They stand looking at the paper as the Carriers move paper forward. Meanwhile, the rest of cast file in and stand across stage behind the paper. Newsboy and Girl then face the audience. GIRL: I never thought of relating mathematics to all these things. Give me one of your papers.

NEWSBOY (*Hands her a paper, then faces the audience*): I thought you'd like it when you understood it better. We also keep a mathematics bulletin board in the hall outside our classroom. You will find news items there every week. Now we must go. Let's have everybody join us in our closing song. The words are on your programs. All sing.

#### CLOSING SONG

(*Tune: Battle Hymn of the Republic*)

Oh we're the Mathematics groups  
Of our school, you see;  
We're pursuing mathematics with  
A great intensity.  
'Tis a very living subject of a  
great fertility,  
Its truth is marching on.

### Chorus

Glory, Glory Mathematics  
 Glory, Glory Mathematics  
 Glory, Glory Mathematics  
 Its truth is marching on.

A universal language, just the  
 Same the wide world o'er,  
 It started from such simple things  
 As two and two make four,  
 And every day in every way  
 Important more and more,  
 Its truth is marching on.

### Chorus

(Curtain)

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## The editor's mail

441 Park Rd.  
 West Hartford, Conn.  
 Nov. 20, 1953

Mr. Henry Van Engen, Editor  
 THE MATHEMATICS TEACHER  
 Iowa State Teachers College  
 Cedar Falls, Iowa

Dear Mr. Van Engen:

May I take this opportunity of disagreeing with the findings of the editors, whose exposition of a profit problem appears on p. 512 of the November "Teacher"?

It occurs to me that the profit per cow solution which he gives to the question "Which grade of beef will bring the greater profit?" ignores too many of the variables which follow a choice of cost per cow. One of the variables is the number of cows which can be purchased with a given investment, and the other the cost of feeding the herd.

It is unrealistic to assume that identical numbers of each grade is to be compared, since one requires a larger investment than the other, and the profit-per-cow result is therefore meaningless. I find the solution as follows:

Let  $x$  = the available capital in either case.  
 Let  $y$  = the cost of feeding one cow ("substantially the same")

#### FOR PREMIUM ANIMAL

$$\frac{x}{100} = \text{the number of cows}$$

$$\frac{150x}{100} = \text{margin on the herd}$$

$$\frac{150x}{100} - \frac{xy}{100} = \text{net profit}$$

$$= x(1.5 - .01y)$$

#### FOR STANDARD ANIMAL

$$\frac{x}{75} = \text{the number of cows}$$

$$\frac{125x}{75} = \text{margin on herd}$$

$$\frac{125x}{75} - \frac{xy}{75} = \text{net profit}$$

$$= x(1\frac{2}{3} - .01\frac{2}{3}y)$$

It can be seen that, by equating the two parentheses above, the net profit would be equal when the cost of feeding the cows amounted to \$50 per animal, and that, below that figure, standard cows would bring a greater profit percentage on investment. Obviously, cows cannot be raised on this sum, else farming would be lucrative; however, it is interesting to note a theoretical exception to the Solution.

Yours very truly,  
 (Signed) ARTHUR E. CEBELIUS

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