

Supporting Reforms and Developments in Teacher Education for the Digital Economy

Soledad A. Ulep

University of the Philippines

National Institute for Science and Mathematics Education Development

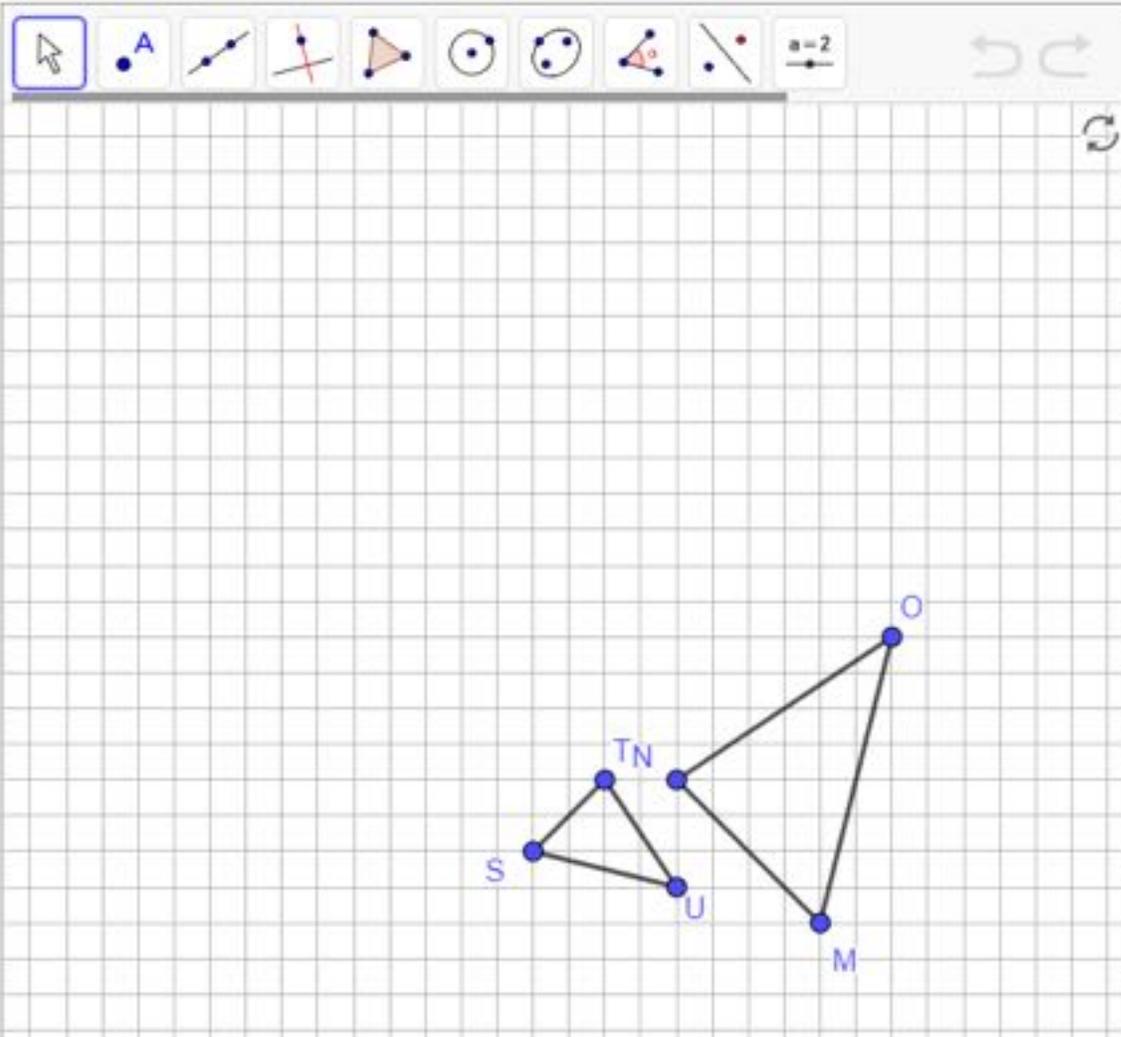
Subjects in the Pre-service Mathematics Education Curriculum

The curriculum now has subjects such as:

- Information and Communication Technology (ICT) Application for Teaching
- Educational Technology
- Seminar on Technology in Mathematics
- Technology in the Learning Environment
- Seminar on Problem Solving in Mathematics
- Mathematical Investigation and Modeling
- Action Research in Mathematics Education and
- Curriculum Development



Shown below are $\triangle STU$ and $\triangle MNO$.

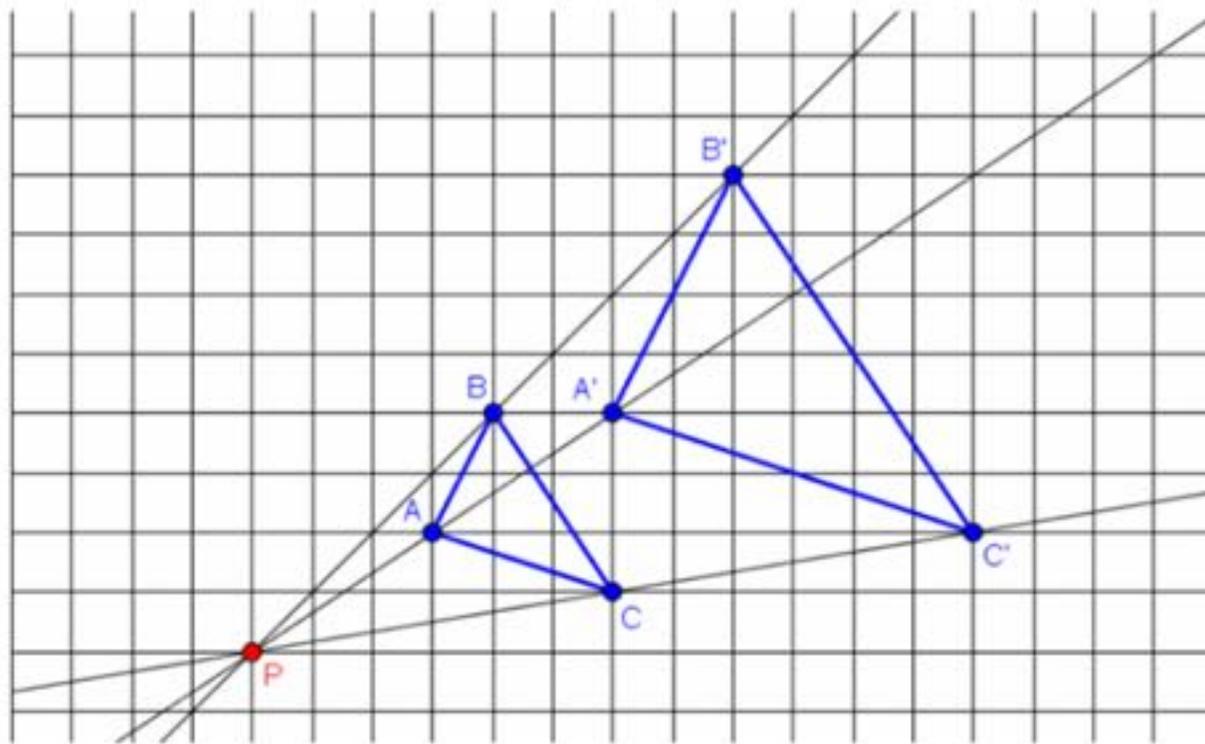


Questions

- 1.) Are the two triangles similar? Why?
- 2.) What is the ratio of the lengths of their corresponding sides?
- 3.) Use the Line tool to connect the corresponding vertices of the two triangles. Did your observations in [Task 2](#) and [Task 3](#) hold?
- 4.) Make a conjecture about the lines connecting the corresponding vertices of similar triangles.

Explanation

If two triangles are similar and their corresponding sides are parallel, then the line connecting their corresponding vertices will intersect at a point. This point is called the center of similarity or point of similarity.

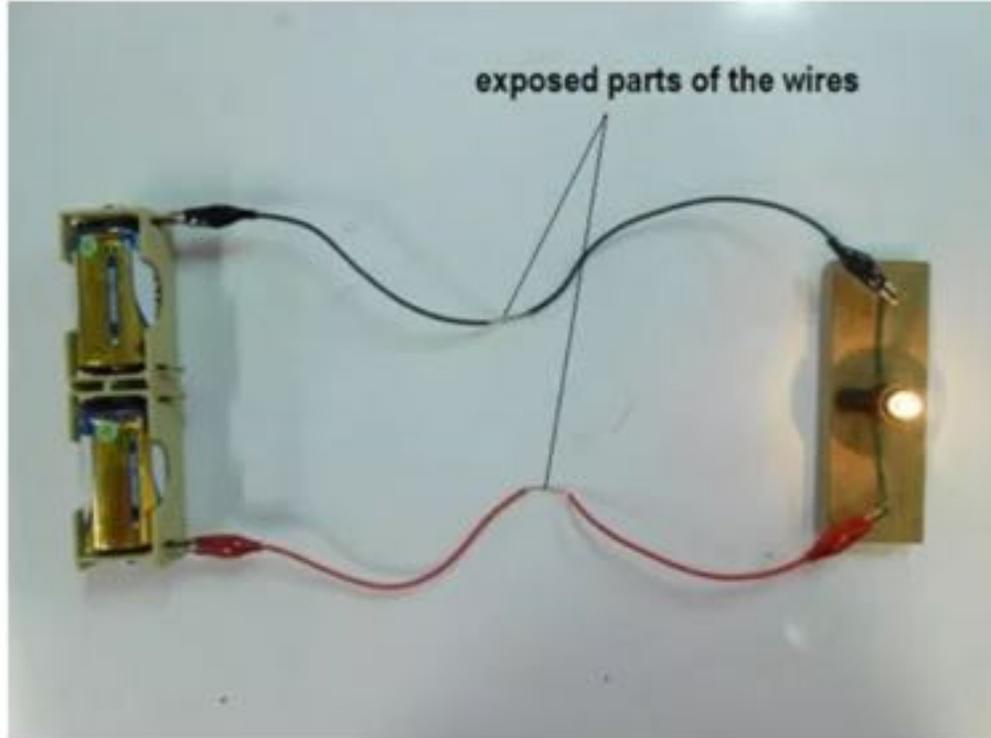


In Task 3, $\triangle ABC \sim \triangle A'B'C'$ and their corresponding sides are parallel. The three lines connecting the corresponding vertices intersect point P as shown above. In Task 4, $\triangle STU \sim \triangle MNO$, but their corresponding sides are not parallel, so the three lines connecting their corresponding vertices do not intersect at a point.

AggiMat

When does a short circuit happen?

© February 24, 2015 Rolly Tan G7 to G10 Science 0



Physical Sciences - Electricity

Grade 8

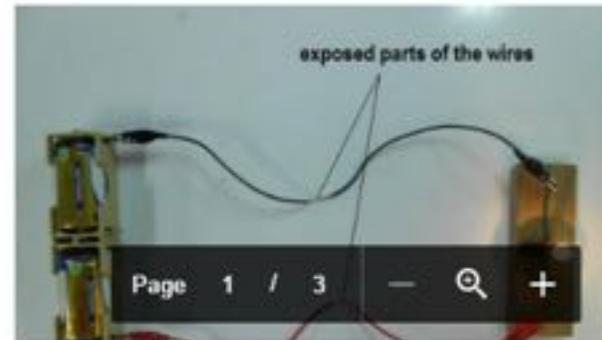
When does a short circuit happen?

What to use:

- 2 batteries
- 2 wires with exposed parts at the middle
- 1 bulb
- 2 battery holders
- 1 bulb holder

What to do:

1. Look at the figure below



[Download \(PDF, 495KB\)](#)

Understanding Earthquakes

Guillermo P. Bautista Jr.
Eligio C. Obille Jr.
Soledad A. Ulep



University of the Philippines
National Institute for Science and Mathematics Education Development



Read the newspaper headline below:



Can you guess what "big one" means?

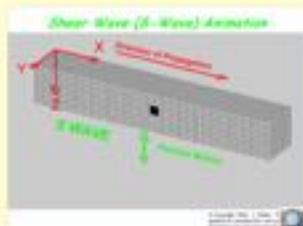
When earthquakes occur, waves are produced. These are the primary waves and secondary waves. Primary waves (p-waves) shake the rock back and forth in the direction that the waves travel while secondary waves (s-waves) shake the rock at right angles to the direction that the waves are travelling.

Would you like to see how these waves travel through rock?

[p-wave animation](#)



[s-wave animation](#)



Home » lesson study , nehs , nismed , Training , up nismed » NISMED spearheads Lesson Study in the Philippines

NISMED spearheads Lesson Study in the Philippines

UP NISMED 10:26 AM No comments:



Lesson study is a teacher-led professional development model where a group of classroom teachers work collaboratively to plan and design a lesson and study student learning by systematic inquiry. In lesson study, teachers are engaged in critical, creative, and collaborative work in developing and researching a lesson through a "design-implement-reflect-revise" cycle until it reaches a form which they believe is exemplary. The main goal is not to develop a

'perfect' lesson but to make the development of an exemplary lesson a context for studying student learning. Since 2006, UP NISMED has been actively promoting lesson study as a model of professional development for mathematics and science teachers.

Lesson study started in Japan in 1872 and since then has been the primary professional development activity of their teachers. Lesson study is now becoming popular among the teachers in the US as well as in other countries. For instance, the World Association of Lesson Study (WALS), which attracts participants from all over the world, has been holding an annual conference on lesson study since 2007. The Asia Pacific Economic Cooperation (APEC) has also been holding international conferences and symposia for promoting lesson study especially in the Asia-Pacific Region.

By Erlina Ronda

Home » Mathematics » Three Teachers, One Lesson on Teaching Trigonometry through Problem Solving in a Lesson Study

Three Teachers, One Lesson on Teaching Trigonometry through Problem Solving in a Lesson Study

UP NISMED 4:41 PM No comments:

by Allan M. Canonigo amcanonigo@up.edu.ph

This article discusses the different ways students solved a given problem involving trigonometry and how the teacher made use of the students' solutions in introducing and developing conceptual understanding of sine, cosine, and tangent. In this study, the teacher introduced a problem to the class and then allowed the students to solve the problem in groups using their prior knowledge and understanding of some mathematics concepts. There were five teachers who were involved in the lesson study, three of whom implemented the same lesson in their respected classes. Results show that in all three classes, students used graphical representation to understand the problem and to present the solution. The diagrams or graphical representations were essential tools for students' mathematical thinking. This is consistent with the study of Greeno and Hall (1997), particularly regarding the algebraic, numerical, and graphical representations. In particular, most of them used the unit circle to arrive at their solutions.

In all these classes, the students were not able to provide much reasons to justify or explain their solutions. However, the problem has already provided opportunity for students to make connections, justify their solutions, and make sense of sine, cosine, and tangent. Two of the teachers emphasized the unit circle method in introducing sine, cosine, and tangent. Two other teachers utilized the students' solutions in introducing the concept of sine, cosine, and tangent. Although these teachers vary in their approaches to utilizing students' answers and solutions, two of them attempted to ask probing questions to elicit students' justifications to their solutions. This helped the students to make a clear connection of previous mathematical concepts which were needed to solve the problem.

In planning a lesson, the teachers involved in the lesson study team realized that in order to be

KaSaMa Teachers

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MEMBERS

an online community of science and mathematics educators who strive for excellence through innovation and collaboration

LATEST ACTIVITY

Top News - Everything

Judelyn Dura and RANELLE NARRRO joined KaSaMa Teachers
yesterday

Jessie Valenzuela is now a member of KaSaMa Teachers
Tuesday
Welcome Them!

Celia Babín commented on Wilfredo A. Aurea (PIDOT)'s status
Jan 21

Maria Michelle Junio left a comment for Celia Babín
Jan 21

Wilfredo A. Aurea (PIDOT) posted a status
"Good Evening! Im looking for syllabus in Advanced Algebra"
Jan 19
0 Comments 0 Likes

Maria Michelle Junio and Marvic Crisanta M. Cado joined KaSaMa Teachers
Jan 19

JOSEVI DELA TORRE-MACAS and Neo Garrutan joined KaSaMa Teachers
Jan 19

Bingo Lizardo Aligo left a comment for Mike Mantala
Jan 19

Khate Mantala and John Alex Reyrosc are now friends
Jan 19

Mike Mantala left a comment for Bingo Lizardo Aligo
Jan 14

EVENTS

Add an Event

DISCUSSION

Who's in our community?
Started by Celia Babín in Welcome & introductions. Last reply by Jacqueline P. Sison Dec 18, 2018
326 3

We made a science song!
Started by Carina Lerosa in Teaching Strategies-Science. Last reply by Carina Lerosa Oct 26, 2018
4 4

Survey on Sense of Virtual Community – join and be counted!
Started by Celia Babín in Research. Last reply by Divyita De vishu Saha Dec 15, 2017
14 7

Add a Discussion View All

WELCOMING RECORDINGS ON YOUTUBE: WATCH NOW!

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1. UP NISMED K to 12 science webinar series
2. KaSaMa Teachers Live!

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Sign Up or Sign In

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f

ISA NA NAMANG PAKIKALALAI!

Ang ating KaSaMa Teachers Online Community ay nahirang na isa sa 9 na Finalists ng University of the Philippines Gawad Pangulo for Excellence in Public Service.

Gawad Pangulo for Excellence in Public Service recognizes outstanding public service initiatives and projects across the eight constituent units of the UP System.

MAGSINGHIT NATIN ANG PARANGAL!

Ginawaran ang KaSaMa Teachers Online Community ng 2018 UP Diliman Parangal para sa Programang Pang-Ekstensiyon! I-click ang image para matasa ang citation.

Let others know you are in the community. Just click on the actions below (links are already embedded).

- Introduce yourself.
- Participate in discussions.
- Contribute a blog or add comment on a co-member's.
- Welcome newcomers.
- Join a group.
- Download and share resources.

Radio Program

Go Teacher Go! (GTG) is produced by UP NISMED in cooperation with DZUP 1602, the official AM Radio Station of UP.

The program provides additional information and teaching and learning strategies to help raise the capability of science and mathematics teachers in the elementary and secondary school levels.



Innovation of Mathematics Education through Lesson Study Challenges to Energy Efficiency on STEM and Cross-border Education (Philippines and Malaysia)

Lesson Objectives:

The students should be able to:

1. communicate and exchange ideas with fellow students from another country
2. apply their knowledge and skills in currency conversion, graph interpretation, and average
3. identify the different sources of energy and ways to conserve energy
4. think mathematically and appreciate the importance of energy efficiency and conservation



The Lesson

Activity	Philippines' Role	Malaysia's Role
<p><u>Discussion 1</u> CURRENCY CONVERSION and SOURCES OF ENERGY</p>	<p>Teacher Angel writes the responses on the board.</p>	<p>Teacher Teoh to all students: <i>“Yesterday, you were given copies of electric bills from Malaysia and the Philippines and you were asked to write questions about them. Before we proceed with the questions, let’s first take note of the information found in the electric bills.”</i></p> <p>Teacher Teoh to Malaysian students: <i>“What common information can you see in the electric bills?”</i></p> <p>2 Malaysian students respond while Teacher Teoh writes the responses on the board.</p>



The Lesson

Activity	Philippines' Role	Malaysia's Role
<p><u>Discussion 2: GRAPH INTERPRETATION</u></p>	<p>Teacher Angel to all students: <i>“So far, we have discussed about the sources of energy from Malaysia and Philippines. Now let’s focus on how we consume energy by observing the electric consumption graphs from January to July.”</i></p> <p>Teacher Angel to Filipino students: <i>“Describe the electric consumption graph of Malaysia.”</i></p> <p>2-3 Filipino students respond. (Expected answers: range of energy consumption, month with highest energy consumption, month with lowest energy consumption)</p>	

The Lesson Implementation (Philippines)





The Lesson Implementation (Malaysia)



Opportunities for Supporting Reforms and Developments in Teacher Education

1. Provide tried out curriculum materials for greater access
2. Deepen and broaden teachers' understanding of content and pedagogy and enhance their research skills
3. Provide needed materials where there is scarcity
4. Provide alternative modes of professional development (webinars, live streaming of radio program, listening to podcasts)
5. Enable professional collaboration to enhance teaching practice
6. Make lesson study process possible despite constraints in time, distance, and finances

Challenges in Supporting Reforms and Developments in Teacher Education

1. Develop educative curriculum materials
2. Take time to develop curriculum materials
3. Get feedback if the materials are actually used, how they are used and the results in using them
4. Develop exemplars on how integration of curriculum materials can be done in actual lessons teachers make
5. Develop teachers' competence in the critical evaluation of the curriculum materials

Thank you.