

**Mathematics Teacher Technical Group
Pre-Training Study Materials
JOCV/JICA Training Centers**



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各タスクに提出課題がありますが、提出する必要はありません。

**Please use this material for self-study.
There are assignments for each task, but you do not need to submit them.**

Special Note: For future Japan Overseas Cooperation Volunteers (JOCV volunteers) or Japan International Cooperation Agency Volunteers (JICA volunteers), DO NOT COPY this webpage and give the copy to the training center instructors.

Read the “What you need to do...” sections and follow the instructions. Give your work product to the Language Section Staff or to your instructors for them to check and return to you.

Welcome to the Math Teacher Training Program. You are about to take part in an intensive training program the objective of which is to prepare you to become a self-sufficient and fully functional math teacher. The program will prepare you to perform your host country JOCV assignment to your fullest.

The Program is intensive. You will only have about 70 hours of class time to acquire the language and teaching skills to enable you to meet the above objective. To be a competent teacher, you will need to focus on the tasks you will be given and do your best to accomplish each of them.

How much you will learn and how well you will be able to perform will be up to you. Your instructors will guide you, they will give advice and they will help you in any way they can, but you must make the effort to learn and use what you have learned.

You will find tasks that you must do below. Each of them plays an important part in the Program. You do not have to do each of them perfectly, but you are expected to do each of them to the best of your ability.

A schedule for the completion of the tasks is below:

- | | |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Task 1 | Complete the questionnaire and send it to the training center by the postal service <u>before</u> you arrive at your training center. |
| Task 2 | Study the vocabulary related to your assignment and fill-in the self-study sheets before you enter the Center. Give the results to the Language Section Staff <u>when you arrive</u> at the Center. |
| Task 3 | Make the lesson plan following the instructions and give the results to the Language Section Staff <u>when you arrive</u> at the Center. Write the plan the same way you would for a lesson you will give in your host country. |
| Task 4 | Read the orientation material <u>before</u> you arrive at the Center. The information in it will be important for you to understand. The information will serve as the basis for your training. |
| Task 5 | Prepare the 3-minute speech <u>before</u> you arrive at the Center. It will be given in your first Program class. Be sure to check the relevant information and practice your speech. |

Detailed information on each of the tasks follows. Good luck and, once again, welcome to the Math Teacher Training Program at the JOCV/JICA Training Centers.

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Task 1- Math Teacher Trainee Questionnaire

Purpose: To give your instructor basic information about your background and expectations you have for your training.

What you need to do: Fill-in the questionnaire and send it to your training center before you arrive.

Mathematics Teacher Trainee Questionnaire

Please give complete and detailed answers in English to the following questions:

- 1) What is your name and what would you like to be called in your classes?

- 2) What was your pre-JOCV job? (If you were a student, what did you study?)

- 3) Have you ever taught before? If yes, please give details such as how long, what level and so on.

- 4) Have you ever been abroad? If yes, please give details such as where, how long, why you went, etc.

- 5) Have you ever spoken to foreigners before you entered JOCV? If yes, please give details.

- 6) What is your JOCV host country and what is your assignment there? Please give details.

- 7) What are any problems you think you will have doing your assignment? Please give details.

- 8) What do you want to learn in your technical class? Please explain your answer.

Task 2- Technical content and specific purpose language related to specific assignments

Purpose: In your host countries it is generally assumed that a mathematics teacher knows and can teach basic topics. Please review the language and contents related to these topics in your field of specialization.

What you need to do: Complete the following task and give it to the Language Section Staff or to your instructor **after** you arrive at the Center.

Complete the following:

1. The 4 symbols in the table below are used for describing simple arithmetical operations. Follow the example and write the names of each one and a sentence to describe its use. Use the example to help you.

| | Names | Use |
|----------|----------------------------------|------------------------------------|
| + | Addition sign Or Plus sign | We use it to add numbers together. |
| - | | |
| × | | |
| ÷ | | |

2. Write the following in words: $7 \times 3 = 21$

3. Write the following in words: $49 \div 7 = 7$

4. Write the following in words: $10 + 8 = 18$

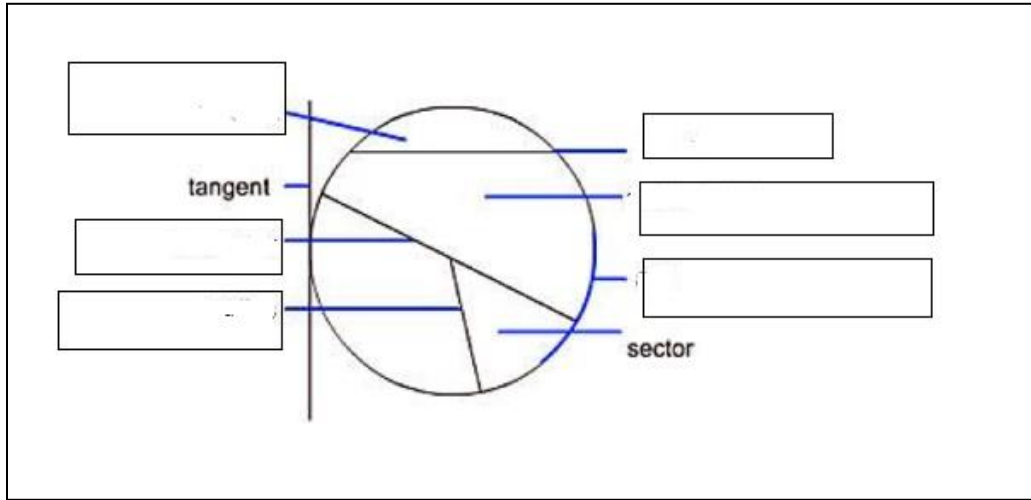
5. Explain the difference between an *odd number* and an *even number*. Use examples in your explanation.

6. Explain what a *whole number* is. Use examples in your explanation.

7. Explain the difference between *vulgar fractions* and *decimals*. Use examples in your explanation.

8. Look at the diagram below. What is the name of the branch of mathematics which deals with the properties and relationships of shapes, lines, points, etc.?

The branch is _____.



9. Write the names of the parts shown by the blue lines in the diagram above in their correct boxes.

10. What is a tangent? Explain it in your own words below.

11. Write the formula for finding the area of a circle.

12. Now complete the instruction sentence below to tell someone how to find the area of a circle.

To find the area of a _____ we _____
_____.

13. What is the name of the branch of mathematics which uses letters of the alphabets to represent unknown numbers?

14. Look at the mathematical expressions in the table below. Write how to say each expression in words.

| | Expression in words |
|-----------------|---------------------|
| 5^2 | |
| $\sqrt{100}$ | |
| $(5 + 8)2$ | |
| 2^{-1} | |
| $\sqrt{10 + 6}$ | |

Task 3- Make a lesson plan

Purpose: You will have a very limited amount of time to not only improve your English language skills, but also learn and use appropriate teaching vocabulary and skills. Your sample lesson plan will help your technical class instructor prepare appropriate activities to directly help you remedy any mistakes or problems you may have.

What you need to do: Look at your assignment data sheet. You can use one of your future assignment tasks to make a model lesson. You can use the lesson plan template that follows to help you to organize your plan. Don't worry if you can't do it well. Just try to do your best! Give the completed plan to your instructor **after** you arrive at the Center.

Lesson Plan

Presenter Name:
Lesson Target Time:
Lesson Audience Level:

Topic:
Lesson Date:

Lesson Objectives:

- 1.
- 2.
- 3.
- 4.
- 5.

| Time Used | Visual Aid/ Whiteboard | Lesson Script |
|-----------|---------------------------|---------------|
| | | |

Time
Used

Visual aid/
Whiteboard

Lesson Script

Task 4-Read the orientation materials

Purpose: The following orientation materials contain the basic information of what is expected of you as a trainee, what you can expect from your instructors, how you will be judged during your training and advice that will help you to survive and improve. Understanding this information will help to avoid any misunderstandings about your training.

What you need to do: You need to read the information **before** you arrive at the training center. Your instructor will give you details in your first technical English class.

Information about your technical classes

Your training center instructor will give you an orientation about your technical classes in your first formal lesson. Below are some of the topics your instructor will go over with you:

- 1) Who you are and what is expected from you**
- 2) What is expected from your instructors**
- 3) Choosing topics for your training**
- 4) How you will be judged**
- 5) Advice for if you have trouble**
- 6) Helpful ideas for you to be successful in your training**

The purpose for your orientation is to help you to understand what your English language technical training will demand of you. Details of the above topics will be made clear so that there will not be any misunderstanding about your technical class training.

Feel free to ask your instructor if you have any questions about any of the above training topics.

Task 5

Your First Assignment

Part 1

You are to give a minimum 3-minute speech in your first technical **in English** about your host country, your future school and what you will do there. You will need to gather as much information about it between now and your speech date (your JICA Data Sheet is a starting point).

The purpose of this speech is to get you to think, act and speak more comfortably in English and to help you understand your future role as a primary education teacher. You need to prepare for it as much as possible.

After you have finished making your speech, each of your classmates will ask you one question in connection to what you have said. Those questions will be good English practice for them to ask and for you to answer. You might also guess what questions people will ask you so that you can prepare and practice answering them before your speech.

Part 2

In your second technical class, you must give the lesson you made for Task 3 of this webpage to your technical class in English. Your instructor and classmates will watch and give you feedback to help you improve your performance.

Appendix 1- Sample of “Can-Do List” in English

Can-do items table for trainee self-evaluation

Trainee’s Name: _____ Job: _____ Date: _____

T. Class Teacher: _____

| Can | Tasks |
|------------|--------------------------------------------------------------------------------------------------------------|
| | 1. Follow simple orientation instructions in preparation for job-related activities |
| | 2. Make simple questions to get basic facts or more explanations |
| | 3. Show someone the necessary actions for completing a job task using very simple language |
| | 4. Say what is happening, what will happen, or what has happened while demonstrating a skill |
| | 5. Describe how a mechanical, natural, or social system works in simple sequenced statements |
| | 6. Give detailed instructions on how to do a job, or on how to use a principle or formula to solve a problem |
| | 7. Give warnings and explain what will happen and why it will happen if we do or don’t do something |
| | 8. Change the technical language of a theory, equation or concept into more simple language |
| | 9. State professional titles and explain personnel roles in profession or technical field |
| | 10. Name common tools, materials, parts of equipment, etc. in job area and state their uses |
| | 11. Read or listen to and understand books, articles or lectures about the technical subject |
| | 12. Name basic topics, concepts, equations, symbols, etc. in technical subject area |
| | 13. Check audience’s knowledge and skills level and decide what they need to learn |
| | 14. Make the objectives for a lesson, workshop, community projects, etc. to teach knowledge or skills |
| | 15. Choose the necessary information and activities for teaching a lesson |
| | 16. Make the questions or test tasks to check how much my audience have learned |
| | 17. Prepare and give full lessons, workshops or presentations by myself |
| | 18. Make original plan and choose contents for a full technical information and skills course |
| | 19. Write or present a project proposal or report |
| | 20. Make an audience change their attitudes or habits or make them agree to cooperate |

Appendix 2- Peer and Self Evaluation Forms

Lesson Evaluation Form

Speaker: _____ Subject: _____ Date: _____

| <u>Introduction</u> | Poor | Minimum | Good |
|-------------------------------------------|-------------|----------------|-------------|
| Ability to catch the audience’s attention | _____ | _____ | _____ |

| <u>Lesson Body</u> | P | L | M | G | E |
|----------------------------------|----------|----------|----------|----------|----------|
| Main points are clear | — | — | — | — | — |
| Key vocabulary words written | — | — | — | — | — |
| Explanation of main points | — | — | — | — | — |
| Check for audience comprehension | — | — | — | — | — |
| Use of examples | — | — | — | — | — |
| Audience participation | — | — | — | — | — |
| Organization of lesson | — | — | — | — | — |

| <u>Presentation of information</u> | P | L | M | G | E |
|-------------------------------------------|----------|----------|----------|----------|----------|
| Use of general vocabulary | — | — | — | — | — |
| Ability to answer audience questions | — | — | — | — | — |
| Time management | — | — | — | — | — |
| Preparation for this lesson | — | — | — | — | — |
| Eye contact with audience | — | — | — | — | — |
| Self-confidence of speaker | — | — | — | — | — |

| <u>Conclusion</u> | Poor | Minimum | Good |
|---------------------------------|-------------|----------------|-------------|
| Summary or conclusion was made | _____ | _____ | _____ |
| Check of audience comprehension | _____ | _____ | _____ |

P = Poor performance L = Lacking performance M = Minimum performance
G = Good performance E = Excellent performance

Your feelings about today’s lesson (Circle one)

Excellent Good Fair Difficult Poor

Your suggestions to improve the lesson (Write them below)

Self- Evaluation Form

Speaker: _____ **Subject:** _____ **Date:** _____

A) How did you feel about the lesson? (Circle One):

Very good

Good

Fair

Not too bad

Bad

B) What were the good points of the lesson? Please list them below:

C) What were the bad points of the lesson? Please list them below:

D) What changes would you make in the lesson to make it better? Please list them below: