

CoREF, The University of Tokyo
Lesson plan of collaborative learning based on [The Knowledge Constructive Jigsaw method](#)

School name: Saitama Prefectural Wako Kokusai High School
Teacher & Lesson planner: Masaru Yamazaki

Subjects	Foreign Languages Intercultural Understanding	School grade	11th grade of Foreign Language Department
No. of students	21	Learning unit	Ecosystems and Humans (Topic 9)
Session No. / Total session times	3/3	Textbook/Publisher	CLIL GLOBAL ISSUES (Sanshusha Publishing)

Purpose of the lesson (What are the students expected to learn? What kind of learning does this lesson lead to?)
To consider the environmental conservation measures for Mt. Fuji, one of Japan's world heritage sites.
Key assignment (Applying jigsaw activities as a main component of the lesson)
How can we solve the problems Mt. Fuji is facing now as a result of receiving more tourists?
Expectations for the current knowledge/learning of the students (How successfully can they answer the question above before the lesson? What would they struggle over?)
They may have learned from TV/newspapers that Mt. Fuji has been registered as a world heritage site, but they are probably not aware of the details of the issues around the mountain. They should be able to consider possible issues by leveraging their current knowledge of environment problems. However, they may not have thought about how the issues are connected to one another.
Elements of expected answers (By the end of the session, what kind of story should they be able to tell? What should their answers include? Think about the criteria for evaluating their understanding of the lesson contents.)
<ul style="list-style-type: none"> • Restricting the numbers of climbers by making it mandatory to pay an admission fee • Promoting car regulations • Setting up a mountain railway as a replacement of motorways • Requesting climbers to bring their trash back home • Installing bio toilets
Each expert <What are the students expected to learn in each expert in order to answer the given question successfully? What contents/activities should they go through?>
<p>(Introduction) World Heritage site Registered as a world heritage site in 2013 / Geographically registered area / Cultural heritage, not natural heritage / Popular tourist destination / Increasing number of tourists and climbers / Negative impact caused by tourism?</p> <p>Expert A: Congestion World heritage / Increasing number of tourists / Goraiko (Magnificent sunrise) / Four climbing routes / Reasons for congestion / Restrictions on the number of climbers / Climbing regulations / Any impact caused by the Tokyo Olympic Games 2020?</p> <p>Expert B: Toilets Climbing routes without toilets / How can the landscape be maintained? / Lack of toilets / "White river" caused by discharged excretions / Bio toilets</p> <p>Expert C: Trash Trash dump / Climbers' awareness / Illegally dumped trash / Litter cleanup activities by volunteers</p>
Next assignments/learning contents based on what the students have learned through their jigsaw activities
Re-writing about the main assignment individually.

The relationship among the previous, current and next sessions

Session	Learning contents/activities	Expected learning goals
Preliminary	Ecosystems and Humans	What is an ecosystem? How is it related to humans?
Previous	Tourism and Ecosystems	Tourism and development / environmental problems
Current	“Can Mt. Fuji survive tourists?”	Considering the environmental conservation measures for Mt. Fuji (a world heritage site)
Next	Writing about the main assignment of this session	Summary of this session
Afterward	Endangered Species	Endangered Species

Learning objective for the students

Being able to explain what they have learned using their own words.


How to design the learning activities for this session


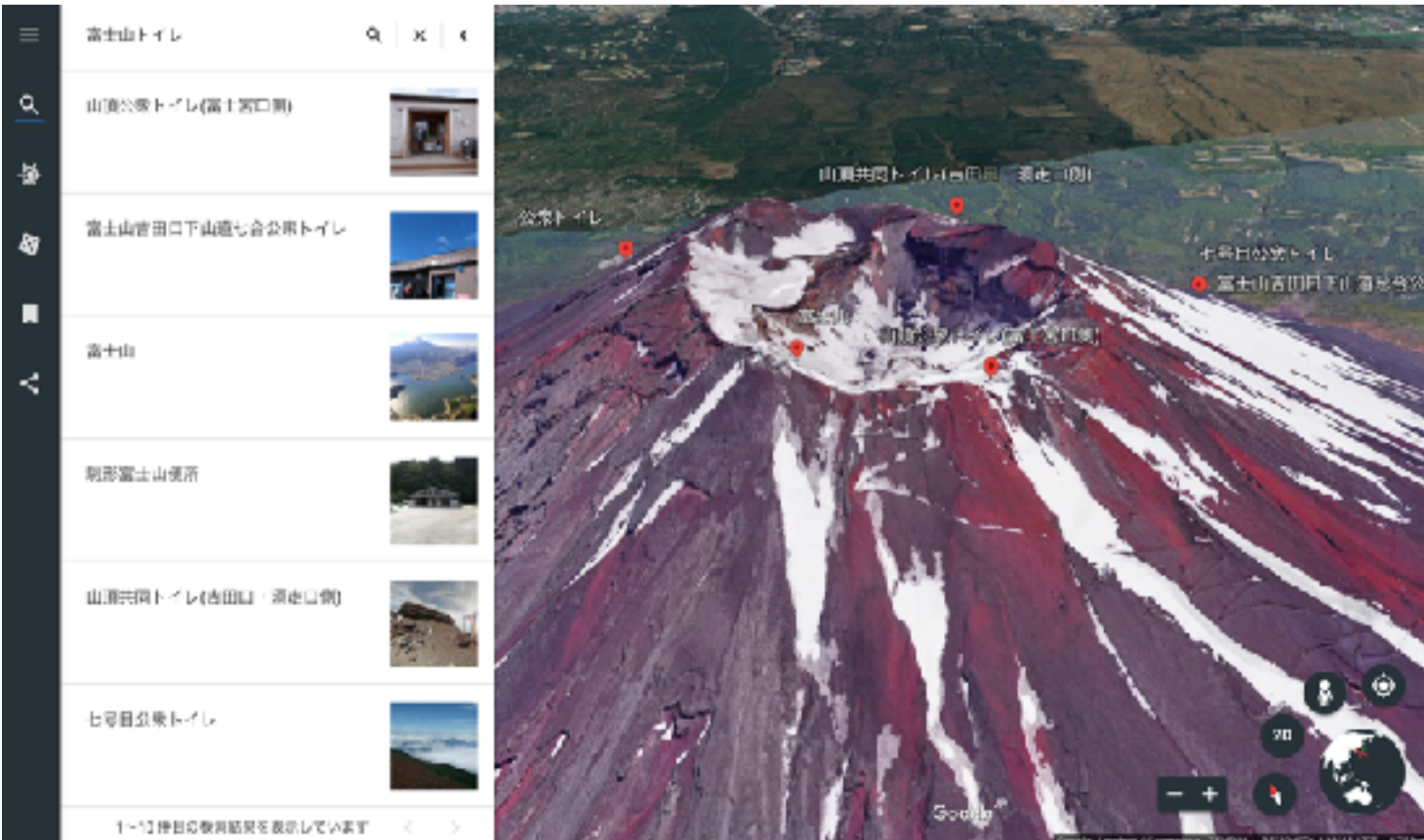
Grouping

21 students per class

Expert group 3 people × 3 groups + 4 people × 3 groups

Jigsaw group 3 people × 3 groups + 4 people × 3 groups

Time	Learning activities	Support from the teacher
5 mins	<p>Give an oral introduction to the current situation of Mt. Fuji. Visually examine the mountain with Google Earth.</p> <p>[Using Google Earth]</p>  <p>Top: Checking Mt. Fuji from a range of angles. Middle/Bottom: Observing some cultural assets including the Sengen Shrine and the Shiraito Falls.</p>	<p>Describe the impact caused by the growing number of tourists and climbers.</p> <p>Use Google Earth's 3D mode and Street View as visual aids in order to understand the current situation of Mt. Fuji and its cultural assets as well as their geographic relationships.</p> <p>Lead an interactive discussion to confirm the students' understanding of the lesson.</p> <p>Reference: • The Complete Guide to Mt. Fuji</p>

5 mins	Each student writes down their own thought.	Writing on the Worksheet (1).
15 mins	<p>Expert activities (A / B / C)</p> <hr/> <p>Expert A: Congestion on Mt. Fuji</p> <p>[Things to consider] Increasing number of tourists after the registration of Mt. Fuji as a world heritage site / Four climbing routes / Reasons for congestion / Restrictions on the number of climbers / Possible climbing regulations / Any impact caused by the Tokyo Olympic Games 2020?</p> <p>[Using Google Earth] As a way of reflecting on the congestion of Mt. Fuji, examine the location and geographic features of the main climbing routes with Google Earth. Consider how these can be related to the congestion of the mountain.</p>  <p>Click the icon of Pegman on the lower right corner to view the climbing routes highlighted in blue in Street View.</p> <hr/> <p>Expert B: Toilet-related issues on Mt. Fuji</p> <p>[Things to consider] Climbing routes without toilets / How can the landscape be maintained? / Lack of toilets / “White river” caused by discharged excretions / Bio toilets</p> <p>[Using Google Earth] Search the locations of the toilets on Mt. Fuji with some words, such as “Mt. Fuji toilets” or “Mountain huts.” Use your findings to think about the relationships between each climbing route and its number of toilets. Check the current situation of the actual sites with Street View. All of these help consider the toilet-related issues on the mountain.</p>  <p>Searching for the toilets around the summit of Mt. Fuji</p>	<p>Organize key points on each Worksheet (A, B, C), and prepare to explain them during the jigsaw activities.</p> <p>By referring to the official website of Mt. Fuji, use the Street View feature of Google Earth to check the main climbing routes. This can be a useful visual aid in contemplating what makes the mountain so crowded.</p> <p>References:</p> <ul style="list-style-type: none"> • The Official Website for Mt. Fuji Climbing • The “Access / Vehicle Restrictions” section of the same official website <hr/> <p>By referring to the official website of Mt. Fuji, encourage the participating students to check the locations of the toilets on the mountain. Use the Street View feature of Google Earth to take a look at each location in detail. This will be a useful visual aid in contemplating the toilet-related issues.</p> <p>References:</p> <ul style="list-style-type: none"> • The “Toilets on Mt. Fuji” section of the same official website • The “Rules and Manners for the toilets on Mt. Fuji” section of the official website for Shizuoka prefecture [Japanese only]

15 mins



Using Street View to see images of shared toilets on the summit near Yoshida/Subashiri routes.

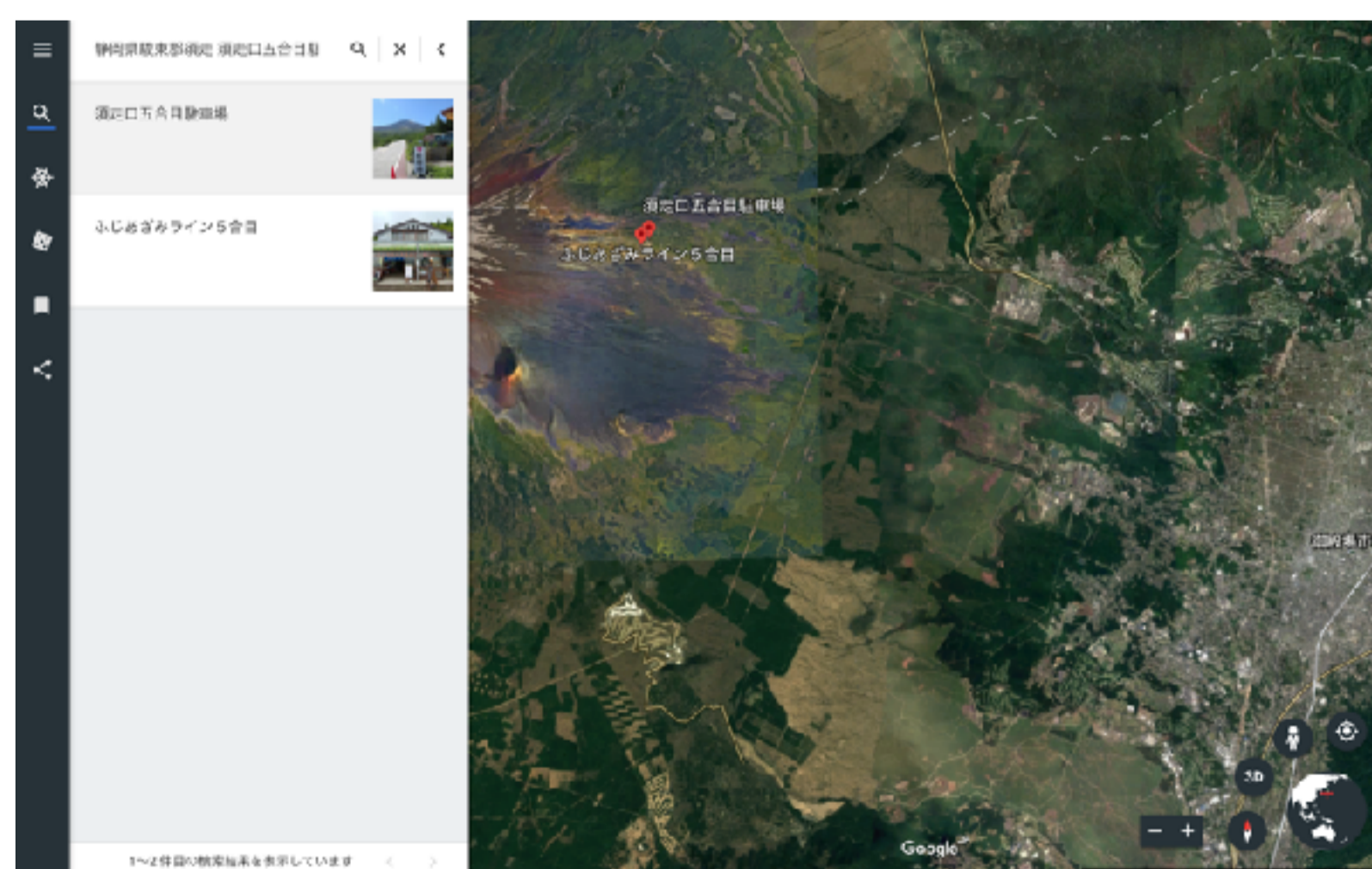
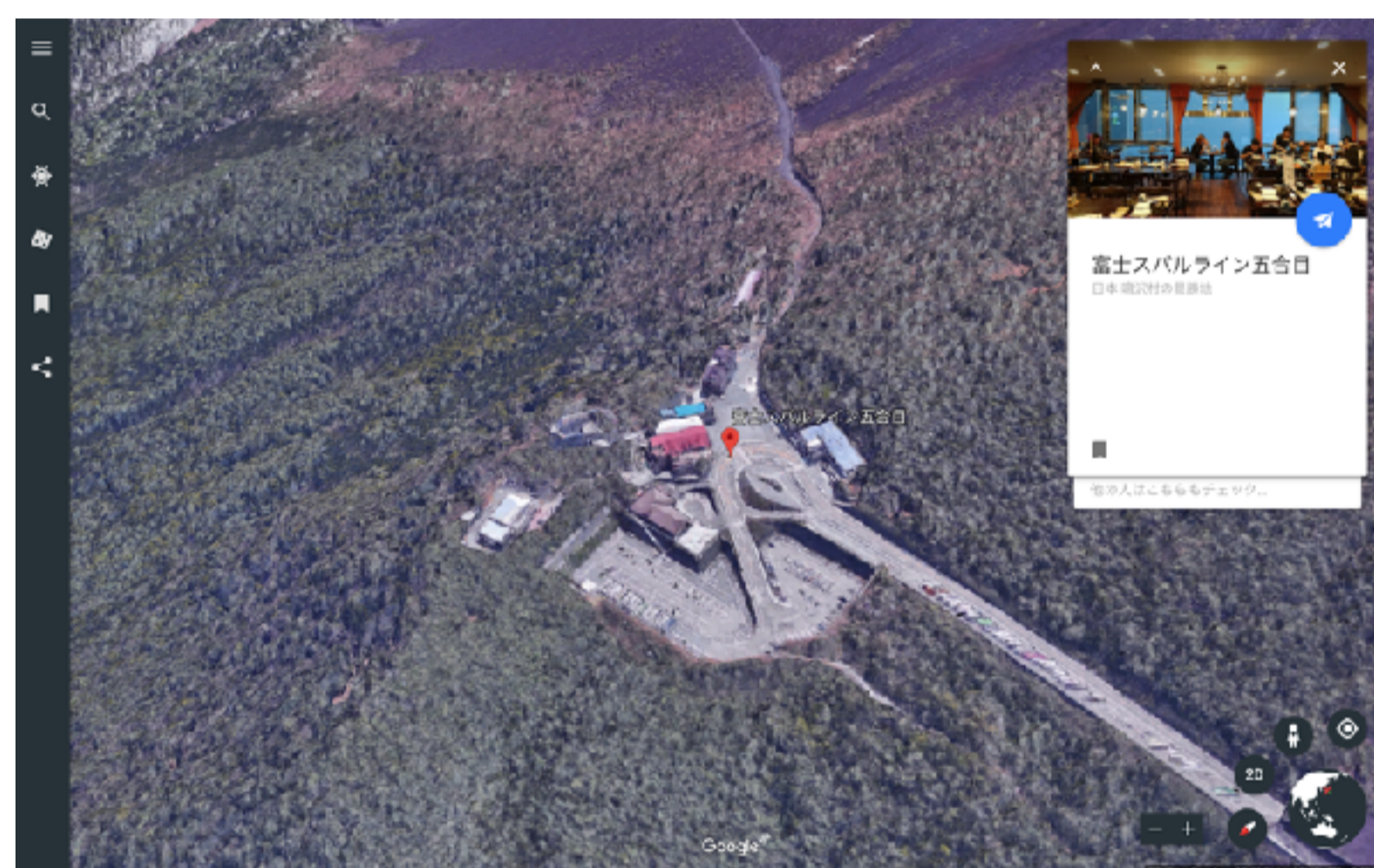
Expert C: Trash issues on Mt. Fuji

[Things to consider]

Trash dump / Climbers' awareness / large-sized trash illegally dumped / Impact caused by the growing number of tourists / Installation of trash cans / Litter cleanup activities by volunteers

[Using Google Earth]

As a way of reflecting on the trash issues, it's important to take into account the activity areas of climbers/ tourists. With Google Earth, search for parking lots around Mt. Fuji. Then think about their locations in relation to their surrounding towns by zoom in and out on Google Earth.



Above: Enter the following in the search field and see the current situations of the parking lots: "Fuji Subaruline Fifth Station," "Fuji Miyaguchi Fifth Station," "Subashiriguchi Fifth Station Parking Lot," "Gotenbaguchi Mountain Trail New Fifth Station."

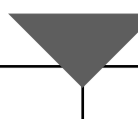
Below: Switch to 2D mode, and zoom in and out to consider the geographic relations between the parking lots and their surrounding urban areas.

By referring to the official websites of Mt. Fuji and Shizuoka prefecture, encourage the participating students to consider the current situation of trash issues on the mountain and the behavior of the climbers/ tourists.

If there is a correlation between the trash issues and the increasing number of tourists, it's crucial to consider the parking lots in the area used by the climbers/tourists. For example, trash issues could arise in an area with a parking lot which is large or closer to the urban area, because many tourists are likely to use it. Use Google Earth as a visual aid to understand the geographic relationships among the locations of each parking lot, the surrounding urban areas, and popular routes.

References:

- [The "Regulation and Rules for Climbing Mt. Fuji" section of the official website for Mt. Fuji Climbing](#)
- [The "Nature Conservation Division and Environmental Conservation for Mt. Fuji" section of the official website for Shizuoka prefecture \[Japanese only\]](#)
- [The "Access / Vehicle Restrictions" section of the official website for Mt. Fuji Climbing](#)



15 mins	Jigsaw activities	Discuss key points from A, B, and C, and organize them on the Worksheet (2). Combine the contents of each Expert material, and have the Jigsaw groups think about the given question and put their answers on the Worksheet (3).
10 mins	Mutual discussion	Each Jigsaw group shares their thoughts and the reasoning behind them. Use the Worksheet (3) to record each presentation.
(Next) 15 mins	Each student re-writes about the main assignment individually	Use the Worksheet (4).

Introduction: World Heritage site

Mt. Fuji was listed as a World Heritage site in 2013. Fuji spans roughly 70,000 hectares, including Sengen Shrine at its foot, five major lakes, the Shiraito Falls and the Miho-no-Matsubara pine grove. Residents and officials had earlier attempted to register the mountain as a natural World Heritage site. However, it was dropped from consideration in 2003 because of the illegal dumping of garbage and the fact that the peak lacks global uniqueness as a volcanic mountain. In 2012, Japan asked UNESCO to add the mountain to the list of cultural World Heritage sites in consideration of its religious importance and repeated depictions in works of art, and then the mountain was recommended for registration. Now Mt. Fuji is one of the most popular tourist sites in Japan for both Japanese and foreign visitors. More than 200,000 people climb to the summit every year, mostly during the warmer summer months. Tourism has a positive impact on local areas, but it also has a negative aspect. The mountain is now facing serious problems that arose as a result of receiving more tourists.

Name:

Worksheet (1)

Task:

- **What problems do you think Mt. Fuji is facing now as a result of receiving more tourists?**

- **How can we solve the problems?**

Name:

Worksheet A: Congestion

Mt. Fuji has become so crowded that it has reached the breaking point. Being a famous cultural icon and the most beautiful mountain in Japan, Mt. Fuji has become a hot spot that every tourist must see. So many tourists try to see the sunrise on the summit and it causes congestion. Mt. Fuji has four trails leading up to the summit, and by studying the characteristics of each trail, the reasons for congestion are revealed. Congestion often occurred whenever visitors entering the Fujinomiya trail, the shortest route up the mountain, exceeded 2,000 in a day. In contrast, no blockage was seen at the Subashiri and Gotemba entrances. The Yoshida trail is the longest but it is the gentlest in terms of slope inclination, which makes it the most popular route. There were four days in a year when climbers on this trail exceeded 4,000 per day, from around 4 a.m. to 5:30 a.m. between the months of July and September. The Fujisan World Cultural Heritage Council is currently aiming to reduce the number of visitors to less than 4,000 at any one time by restricting entry if it does exceed. The 2020 Olympics is just around the corner, and the event will bring even more tourists and problems, so the council should take measures soon.

Task:

- **What is the problem?**

- **What are the causes of the problem?**

Name:

Worksheet B: Toilets

Human waste is left behind by climbers on the trails where there are no toilets. It has raised concerns about whether the mountain’s scenery can be maintained. The Shizuoka Prefectural Government realized after the mountain was closed to climbers for the year that human waste had been left in several locations, including some 900 meters from the fifth station on the trail known as the Subashiri route. Toilets are located along the mountain’s trails except for between the fifth and sixth stations. The lack of sufficient toilets was one of the reasons why the country decided not to recommend Mt. Fuji for the UNESCO listing in 2003. Until 2005, all the toilets on the mountain simply let their waste run down the mountain, which was known as the “white river,” a disgusting flow of toilet paper. In recent years, efforts have been made to get this problem under control. Composting toilets were installed up and down the mountain. Chipped cedar was packed into the toilets, which helped to break down the waste. The prefecture distributed to climbers portable, plastic bag-type toilets and asked them to keep the mountain clean.

Task:

- **What is the problem?**

- **What are the causes of the problem?**

Name:

Worksheet C: Trash

Officials in the prefectures of Shizuoka and Yamanashi have reported discovering large heaps of rubbish on the slopes. Empty cans and discarded cigarette butts littered the trails leading up to the summit, with little awareness among hikers of the garbage problem. Below the fifth station, which is about halfway up the mountain, large items such as electrical appliances, motor bikes, and cars were illegally dumped near routes. The problem has apparently worsened since Mt. Fuji was recognized as a UNESCO World Cultural Heritage site. Prefectural authorities have made efforts to encourage people not to throw away trash on the mountain and installed trash bins at the rest stations. This trash problem sparked a movement to clean up the mountain and conserve its natural environment. For example, the nonprofit organization Fujisan Club, founded in 1998, brings together a total of 6,000 volunteers who participate in cleanup operations held 60 times a year. The amount of trash that the volunteers collected in 2009 alone was 57 tons. Volunteers who participate in these activities are of all ages and come from a wide variety of businesses, schools, and other organizations. Thanks to this concerted effort, the trash situation gradually began to improve. There is now hardly any trash above the fifth station.

Task:

- **What is the problem?**

- **What are the causes of the problem?**

Name:

Worksheet (2)

Task

- Listen to each other and take notes to share information about the problems and the causes.

	Problem	Causes
A		
B		
C		

Name:

Worksheet (3)

Task:

1. Think about the causes of three different problems. How are the causes related?

2. How can we solve the problems?

Name:

Worksheet (4)

Task

- Write an essay answering the following question.

Question

- How can we solve the problems Mt. Fuji is facing now as a result of receiving more tourists?

Name:

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