

Lesson Plan for Pacific Invasive Ant Toolkit Lesson 3 – Where did the ants come from? (45mins)

Prior Skills and Knowledge:

- Identify an ant as a living thing.
- Understand that not all ants are invasive.
- List the positive and negative impacts of ants on our environment.
- Understand the top five invasive ant pests, the problems they cause people, agriculture and the natural environment.

Instructional Objectives:

At the end of the lesson, students will able to:

- Understand where the top five invasive ant pests come from and how they arrive in the country.
- How does biosecurity find ants and what we can do as a community to help?
- What attracts an ant?
- Use math tables and graphs to collect and analysis data.
- Use the skills of self-management, responsible decision-making and problem-solving, exhibit the values of care, respect and social-awareness and show curiosity by asking questions.

Resource Preparation Guide		
Item no.	Description	Remarks
1.	Computer, Projector, Powepoint slides.	For showing of powerpoint slides / Slides to be printed out – 1 copy per 3 students if computer/projector not available
2.	Board or Paper and markers	To use for recording student – teacher interactions during brain storming.
3.	Annex 1a - Matching Exercise Annex 1b - Matching Exercise solution	Annex 1b for teacher's use only

Est Time	Learning and Development	Resources
5 mins	<p><u>Tuning in</u></p> <p>Slide 1 - 2: Teacher to introduce the lesson and the lesson outcomes for the day.</p>	Computer, Project, Slides

	<p>Slide 3: Teacher to recall with the class:</p> <ul style="list-style-type: none"> - The top five invasive ant pests and the problems they cause people, agriculture and the natural environment. - The life cycle of an ant, 4 stages and similar to the butterfly. The structure of the colony which consist of a queen, soldiers and workers. <p>Teacher to ask the question(s):</p> <ol style="list-style-type: none"> 1) What are some ways invasive ants harm our agriculture? 2) What are some ways they harm our wildlife and environment? 3) What are some ways they harm humans? <p><i>Note: Teacher may make use of the Board or paper and markers to record the responses of the students.</i></p>	
5 mins	<p><u>Introduction</u></p> <p>Slide 4: Teacher to ask the question(s):</p> <ol style="list-style-type: none"> 1) Where do you think the invasive ants came from? <p>Teacher to introduce the countries and the different species of invasive ants that originated from them:</p> <ul style="list-style-type: none"> - Africa, Asia, Central American and South America. - The African big-headed ants came from Africa. - The yellow crazy ants came from Asia. - Little fire ants came from Central America. - Red imported fire ants and Argentine ants came from South America. 	Computer, Project, Slides, Board/Paper and markers
20 mins	<p><u>Development 1</u></p> <p>Slide 5: Teacher to share the following facts:</p> <ol style="list-style-type: none"> 1) It only takes one queen ant to start an invasion. They may be hiding almost anywhere. 2) Some of them travelled a very long distance. Too long for a queen to fly! 3) Whole nests can be hidden in soil around potted plants or in a single coconut or macadamia nut! 	

Slide 6:
Teacher to ask the question(s):

- 1) How do you think the ants got from one country to another?

Slide 7:
Teacher to share how ants enter the country:

- Ports
- On ships
- Airports
- Unloading areas
- Storage areas

Teacher provides further information on why they are found in these places and why they are there.

- When cargo, especially sea containers, vehicles and appliances are brought in to the country invasive ants that have been hitching a ride on them will go in search of food or a new place to nest.

Slide 8:
Teacher introduces the term biosecurity and what the people in biosecurity do:

- Biosecurity is where people come together to make sure unwanted living things such as ants do not come into our environment and harm it.
- When the ways in which ants use to enter a country have been identified (e.g. fresh produce, vehicles etc.), it is important to check those goods for ants at the border.
- There is always a chance that something might escape, it only takes one queen ant to start an invasion!

Teacher to ask the question(s):

- 1) Do all countries have invasive ants?
- 2) What sorts of things do ants travel on? These are the things we should check especially carefully
- 3) How do we make travellers aware that they might be carrying invasive ants into the country?

Slide 9:
Teacher introduces the term biosecurity and what the people in biosecurity do:

- When there are lots of things coming in it can be too much work to check them all. As some items are

	<p>stored at the ports where they arrived it makes sense to monitor those ports for newly arrived ants.</p> <ul style="list-style-type: none"> - The people working in biosecurity place attractive lures at regular intervals to attract and trap any ants. The samples can then be collected and identified. <p>Slide 10: Teacher shares that the community can play an important role too by:</p> <ul style="list-style-type: none"> - Make communities aware of the problems ants can cause. Community members can be on the lookout for invasive ants. - There is always a chance that something might escape, it only takes one queen ant to start an invasion! - If the community knows what to look for, they can report any new or problem ants they encounter. Posters are a great way to let the community know what you are looking for and who to call if they find it. 	
15 mins	<p><u>Conclusion</u></p> <p>Slide 11: Teacher to recap the lesson key points:</p> <ul style="list-style-type: none"> • Understand where the top five invasive ant pests come from. • How these ant pests arrive in the country. • How we can use the information from our experiments to help us make decisions. <p>Slides 12 - 13 Extension:</p> <ol style="list-style-type: none"> 1) Students to prepare lures to attract ants and record their observations and findings. <i>Note: General facilitation will be good but the key is to guide the students' thoughts to leaving food uncovered, littering, food wastage at home etc.</i> 2) Students will receive a Matching Exercise to complete at home 	Computer, Project, Slides and Annex 1a

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Adapted from:

http://piat.org.nz/uploads/PIAT_content/pdfs/learning_teaching/Invasive%20Ants%20Lesson%20plan%20new%202.pdf