

Unit 5

Pesticides and Ecosystems



Warm Up

Flowcharts and **classification charts** are explanatory visuals commonly used in academic research. They present **sequential** and **categorical relationships** in visual form, helping researchers transform complex data into concepts that are easier to understand.

In Unit 5, we will learn to:

- Describe the sequential relationships among different parts of a flowchart;
- Explain the classification of items in English and define the characteristics of each category;
- Compare information presented in charts with everyday experiences and thereby express personal opinions.

Useful Strategies and Language

1 Flowcharts

Pesticides may have many negative effects on ecosystems. The following flowchart uses three animals as examples to explain how pesticides accumulate in animals through food chains and affect their health.

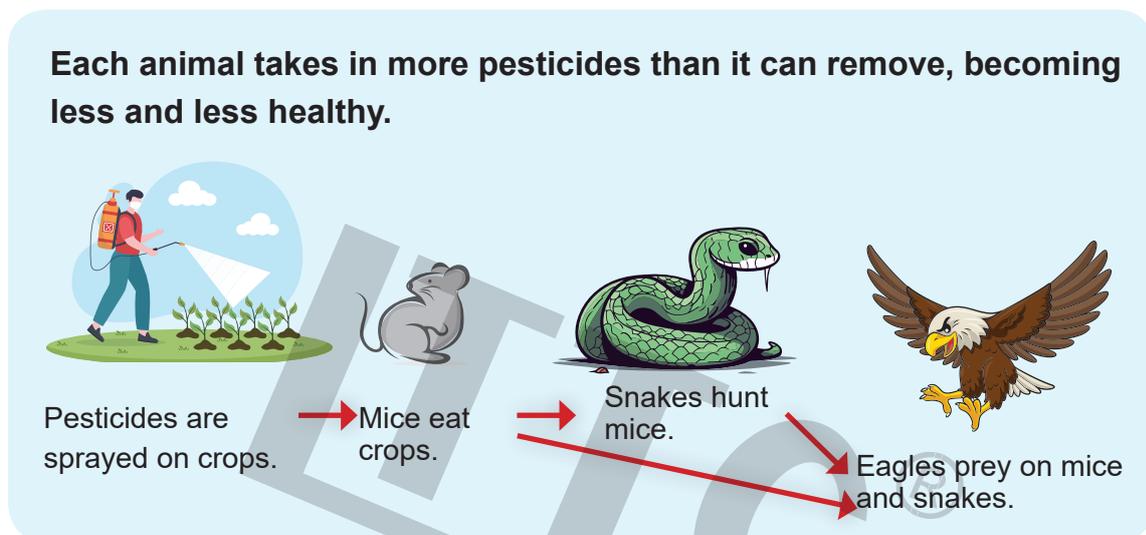


Figure 1 How pesticides spread

Explanatory Techniques and Sample Sentences

(1) Describing the topic and purpose of a flowchart

The flowchart illustrates how pesticides spread through an ecosystem.

(2) Describing the process step by step

Step 1

- Pesticides enter the ecosystem when animals eat the crops covered in pesticides.
- The process begins when animals consume the crops sprayed with pesticides.

Step 2

- Then, when animals eat other animals that have pesticides in them, those pesticides spread even more.
- **Subsequently**, pesticides spread as animals eat other creatures that already have pesticides inside them.

Step 3

- Finally, each animal ends up with more pesticides than it can get rid of, making it less and less healthy.
- **Ultimately**, each animal takes in more pesticides than it can remove, becoming less and less healthy.

 **subsequently** (adv.)

 **ultimately** (adv.)

2 Classification Charts (Tree Maps)

Classification charts can show the categorical relationships among things or concepts and are often used to present definitions and examples. A tree map is a type of classification chart. The following tree map classifies and defines organisms based on their roles in the food chain.

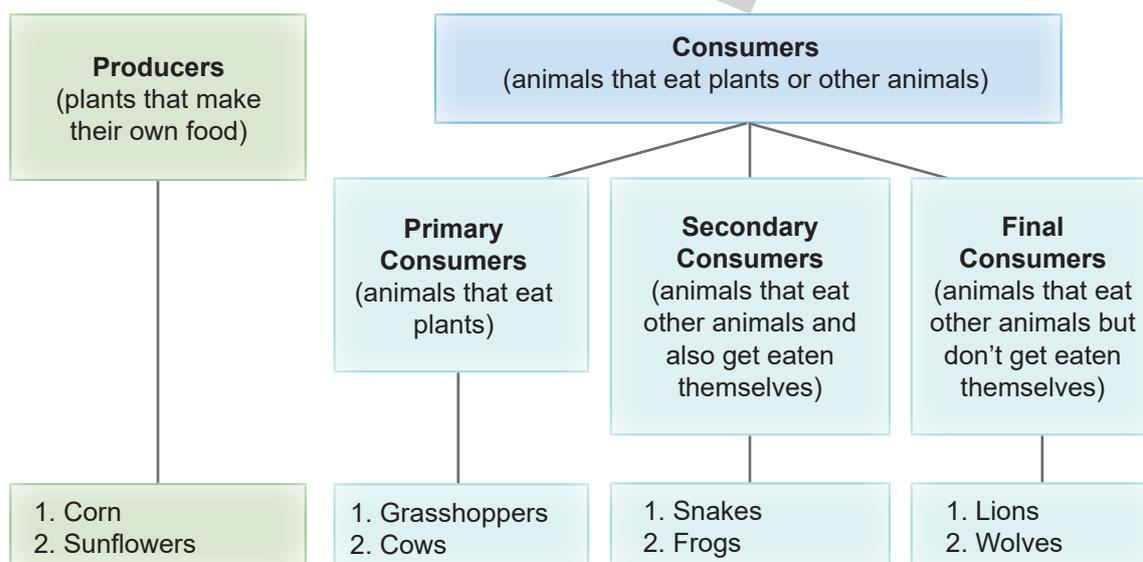


Figure 2 Animals and plants grouped by how they get food

Sources: <https://education.nationalgeographic.org/resource/food-chain/>

Explanatory Techniques and Sample Sentences

(1) Describing the topic and purpose of a classification chart or tree map

- The classification chart **categorizes** plants and animals according to their positions in the food chain.
- The tree map **divides** plants and animals **into** four groups based on their positions in the food chain.

(2) Describing ways of classification

- The classification chart **splits** the category of “consumers” **into** “primary consumers,” “secondary consumers,” and “final consumers.”
- The tree map **breaks down** the “consumers” category **into** “primary,” “secondary,” and “final” consumers.
- Sharks are $\left\{ \begin{array}{l} \text{categorized} \\ \text{classified} \end{array} \right\}$ **as** final consumers.

 $\left\{ \begin{array}{l} \text{categorize} \\ \text{classify} \end{array} \right\}$ (v.)

 $\left\{ \begin{array}{l} \text{divide} \\ \text{split} \\ \text{break down} \end{array} \right\}$... **into** (v.phr.)

(3) Defining the characteristics of categories in a classification chart or tree map

- The chart defines the different roles played by plants and animals in a food chain.
- The tree map defines primary consumers as animals that eat plants.

Speaking Task

1 Task Content

You attend a presentation about the dangers of using pesticides. As part of this presentation, the speaker uses the following two figures to help show how pesticides can affect the environment.

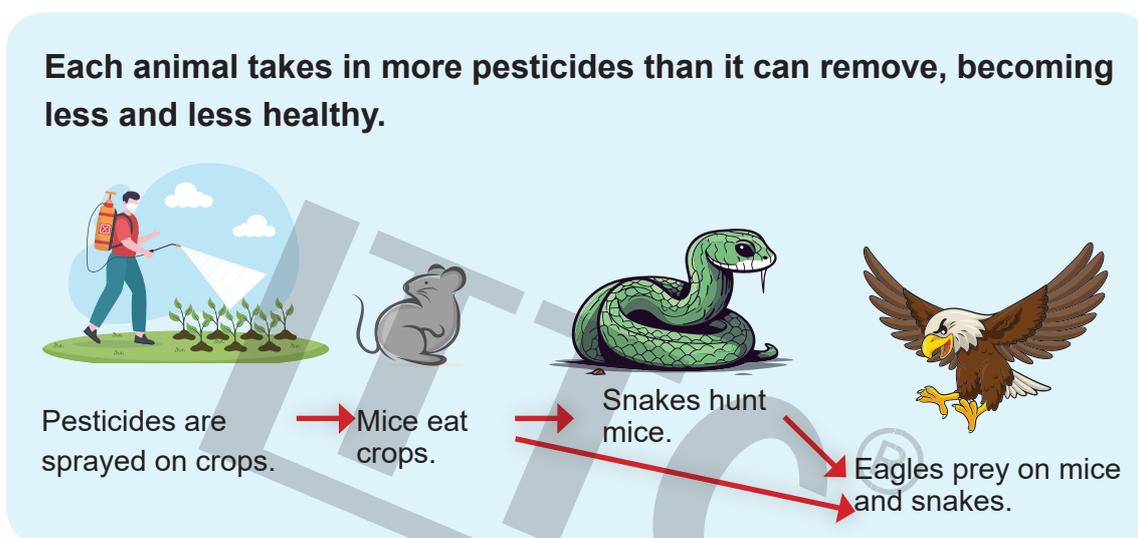


Figure 1 How pesticides spread

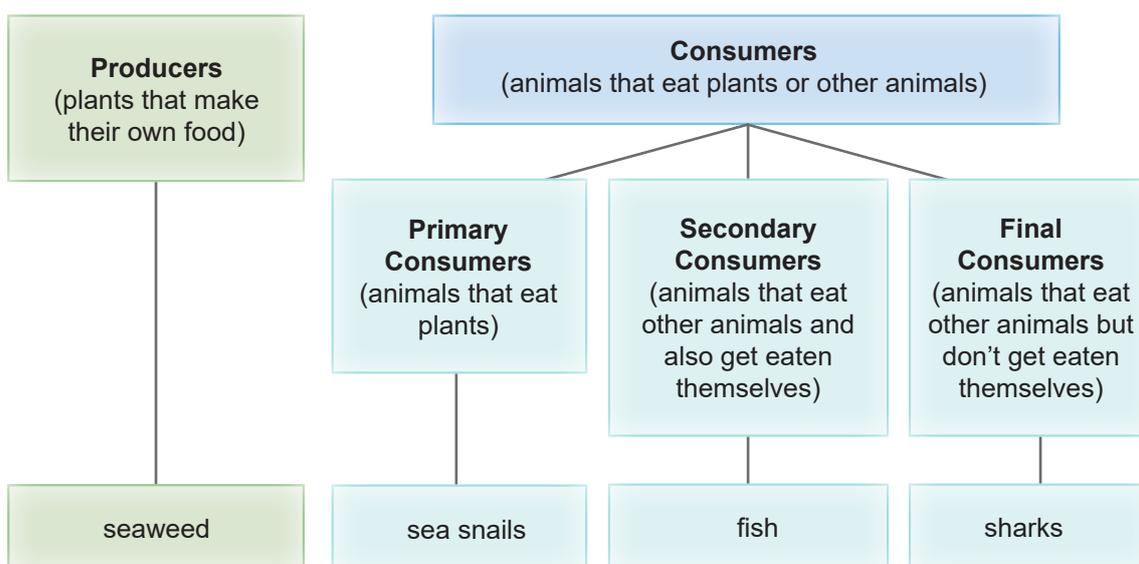


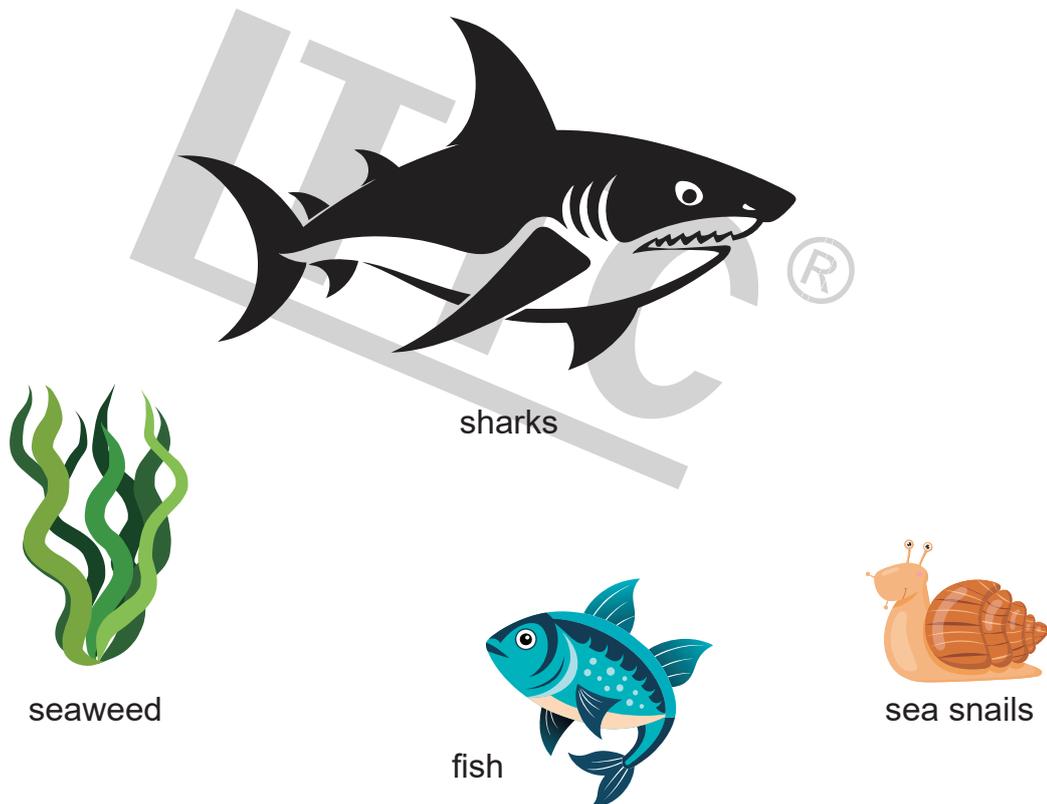
Figure 2 Animals and plants grouped by how they get food

2 Task Requirements

You have 3 minutes to answer the following 3 questions based on the flowchart and tree map.

- (1) How do pesticides spread through an ecosystem?
- (2) Based on the information presented in the two figures, what types of consumers are mice and eagles? Please explain your answers.
- (3) If pesticides leaked into the ocean and got stuck on seaweed, how would the pesticides spread through the ecosystem? Use the plants and animals below in your answer.

Challenge



Writing Task

Challenge

1 Task Content

You attend a meeting about the dangers of pesticides. At the meeting, the speaker uses the following two figures to explain how pesticides can harm people.

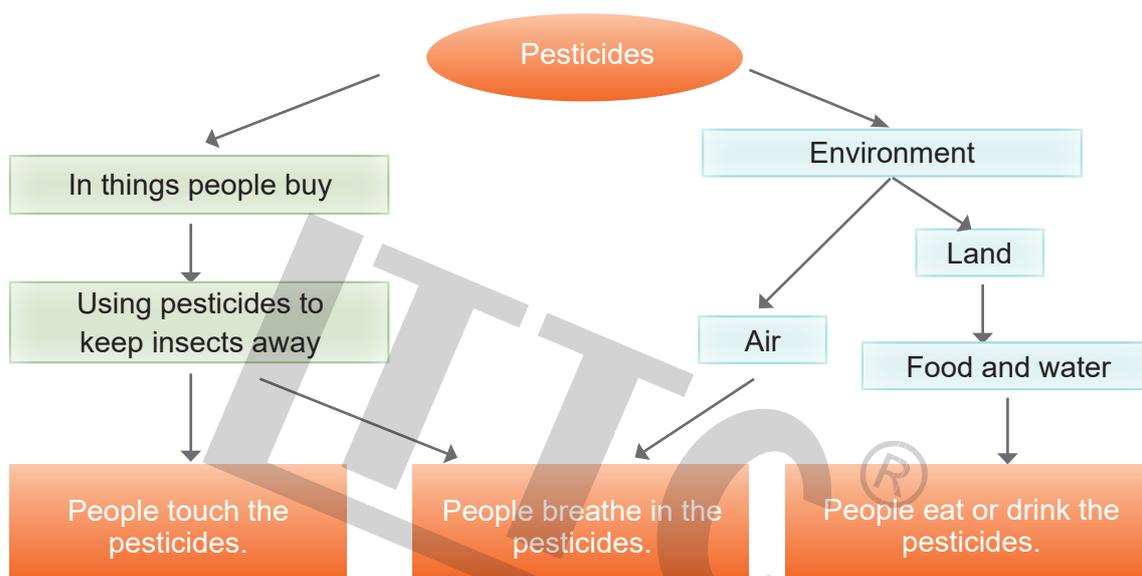


Figure 1 How pesticides spread to humans

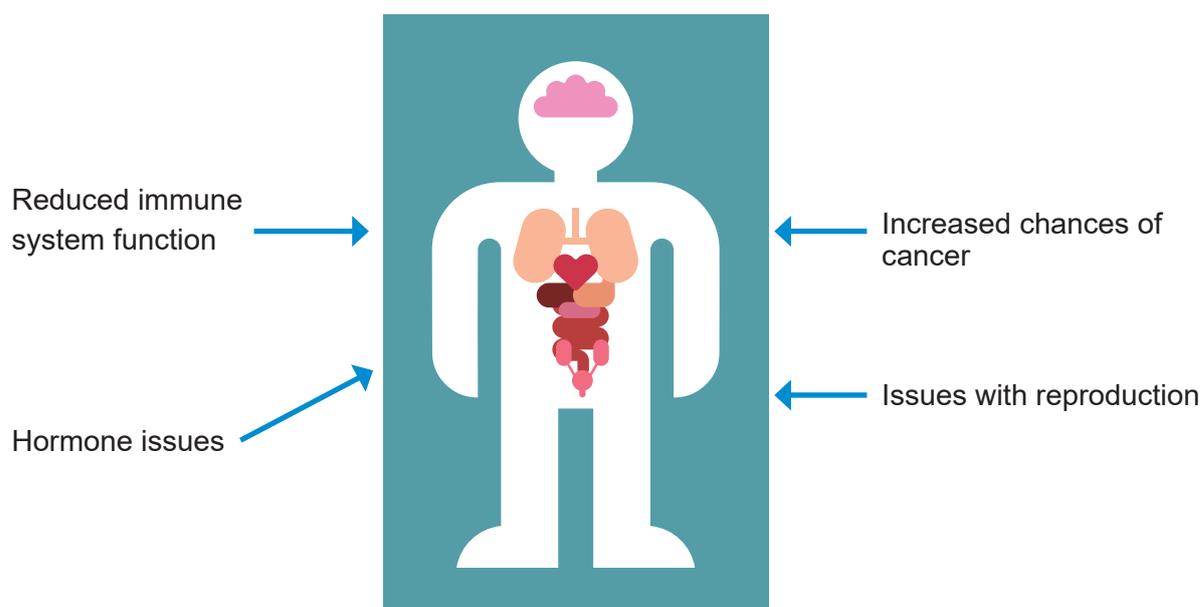


Figure 2 The impact of pesticides on human health

2 Task Requirements

Based on the two figures presented by the speaker, write an essay to discuss the following topic:

Pesticide Exposure: Processes, Impact, and Prevention

In your essay, you should:

- (1) Summarize the main points shown in the two charts;
- (2) Present possible methods to prevent contact with pesticides.

Your essay should be 120–150 words in length.

Notes

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