Section 1

The Geography of Japan

As you read, look for

Setting a Purpose

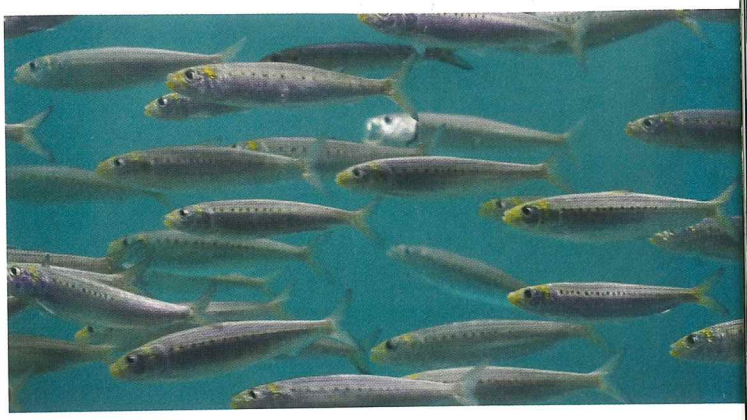
- the four main islands of Japan;
- the physical feature that covers most of Japan;
- how the physical geography of Japan has impacted its development and people;
- how earthquakes and tsunamis affect Japan;
- terms: **archipelago, terrace, Ring of Fire, tsunami, typhoon, homogenous.**

Location and Size of Japan

The island nation of Japan is located on the eastern edge of Asia. It is located in the northern and eastern hemispheres. Japan is an **archipelago**, or series of islands. Because it is an island nation, it does not share a land border with any other countries. Japan is located east of the Korean Peninsula of mainland Asia, across the Sea of Japan. Japan has four large islands: Honshu, Shikoku, Hokkaido, and Kyushu, as well as thousands of smaller islands. Only 430 of those islands are inhabited. Honshu is the largest island and the location of major cities like Tokyo, Osaka, and Kobe.

Bottom: This koi pond in Nagasaki is a reminder of the importance of fish in Japanese art, culture, and diet.

Japan's land area is about 145,000 square miles. For comparison, Japan is slightly smaller than the combined area of Georgia, South Carolina, and Alabama. However, the country has a long, thin outline. If laid over the United States, it would stretch from Canada into Mexico. Japan is the 62nd-largest country in the world by land area.



Physical Features of Japan

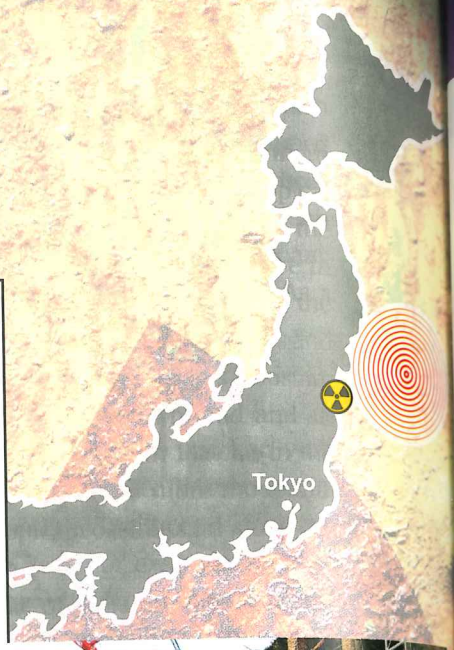
Almost 80 percent of the country of Japan is covered with mountains. This leaves a small percentage of the land suitable for farming. The Japanese have created farmland out of these mountains by building terraces, putting in irrigation channels, and using different fertilizers and farming techniques. **Terraces** are flat areas of land carved into the sides of hills and mountains by farmers so they can grow crops. Even so, Japan has to import food for its growing population. Because Japan has so little farmland, the Japanese people depend on fishing for much of their food. Japan imports fuel as well. The country has a very highly developed industrial economy but no gas or oil. It depends on the world market to import petroleum products.

There are many volcanoes in Japan. Japan is located on the **Ring of Fire**, which is an area around the Pacific Ocean where there are frequent volcanic eruptions due to plate tectonic movements. These volcanoes are often the cause of earthquakes. Japan has more earthquakes every year than any other place in the world. The Japanese people have adjusted to the threat of earthquakes, even though many cause a lot of damage. Some parts of the country have developed hot springs around the volcanic areas, and others use the heat to warm water for people to use. In March 2011, Japan's strongest-ever earthquake, and an accompanying **tsunami** (a long high sea wave caused by an earthquake), devastated the northeast part of Honshu island, killed thousands, and damaged several nuclear reactors. The catastrophe hobbled the country's economy and its energy infrastructure, and tested its ability to deal with humanitarian disasters.

Top: The fishing industry is important to Japan, with fish as a major food source for the country. **Above:** Japan is located along the Ring of Fire, and as such, has many volcanoes, active and inactive, including the Sakurajima volcano. **Left:** To accommodate for the mountainous terrain, the Japanese built terraces on mountainsides to have more room to grow crops.

special Feature

Fukushima Earthquake and Nuclear Disaster



On March 11, 2011, a 9.0 magnitude earthquake struck Japan—the worst in Japanese history. The earthquake lasted for six minutes and was so strong it moved the entire island of Honshu two meters to the east. Once the shaking had ended, however, the worst was still to come. The earthquake created a tsunami over 40 feet high that came crashing down on the eastern coast of Japan, wiping out everything in its path. Over 20,000 people died during the earthquake and tsunami.

In the northern part of Japan was a nuclear power plant called Fukushima Daiichi. At the time of the earthquake and tsunami, only three of the six nuclear reactors were operating. When the tsunami waves hit the power plant, they flooded the basement where the backup generators were located. As a result, the cooling systems in the plant failed, and over the next few days, the second-worst nuclear power plant accident in history began. The Japanese government created an eighteen-mile no-fly zone over the reactors and evacuated 47,000 people from a 12.5-mile area around the reactors. Years later, many of those people have still not returned to their homes. Food and water in the area were contaminated. Contaminated water from the reactors spilled into the ocean.

The Japanese government has spent over $1.5 billion trying to clean and contain the area around Fukushima. The cleanup, however, could take up to forty years. The reactors are slowly leaking low levels of radiation. Experts say the contamination in the area could last up to 300 years. As a result of this accident, Japan completely stopped using nuclear power, which supplied 30 percent of the country's energy. On May 5, 2012, Japan turned off its last generator, and Japan was without nuclear power for the first time in forty-five years. As a result, 80 percent of Japan's fuel had to be imported, which increased energy prices for Japanese citizens. The future of nuclear energy in Japan is still under debate. What would you decide? Do you think Japan should go back to using nuclear power plants, despite the risk of earthquakes?

Top: The Fukushima Daiichi Nuclear Power Plant has to be checked by experts occasionally to ensure the proper steps for decommissioning and deconstruction are taken, but it is a dangerous task. **Above:** Many parts of Japan's eastern coast were flooded by the tsunami in 2011, and many are still left abandoned.

Climate of Japan

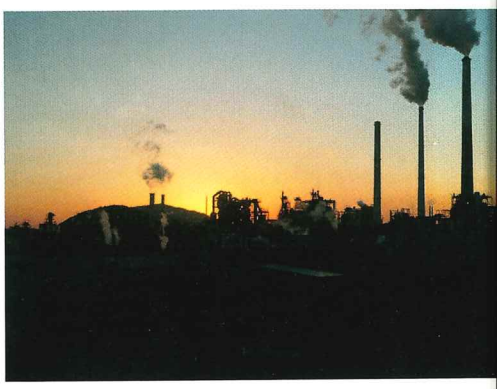
Most of Japan is in the temperate climate zone between the Arctic Circle and the Tropic of Cancer. These latitudes generally have a moderate climate without extremes of heat or cold. However, Japan's climate is affected by ocean currents, and locations are also affected by their altitude.

The Japan Current coming from the south brings warm water to the southern and eastern coasts of Japan, while the Oyashio Current coming from the north cools the northern coast. Farmers in the warmer parts of the country are able to have longer growing seasons, while people living in the cooler north rely on fishing. High, mountainous elevations have colder temperatures.

The islands receive about 40 inches of rain per year. High amounts of rain can be expected when monsoon rains and even tropical hurricanes called **typhoons** hit the islands.

Natural Resources of Japan

Japan has few natural resources. In fact, the only ones it has are a few deposits of minerals. However, because Japan is an island, it has excellent access to areas that are good for fishing. One of Japan's main exports is fish, and fish are a very common Japanese food. Another effect of Japan's rocky terrain is that there is very limited arable land. Japanese farmers have built terraces into mountains to try to produce more food, but Japan still has to import food to feed its population. To meet its energy demands, Japan has to import oil, natural gas, and other resources. This fact has made Japan the world's largest importer of coal and natural gas and the second-largest importer of oil.



Environmental Issues of Japan

Like all countries in the world today, Japan has several serious environmental issues it must deal with. Many of these issues are the result of burning coal and oil for power. Acid rain is a major concern in Japan. Not only does it damage buildings, but it can also pollute lakes and reservoirs. Acid rain is a direct result of air pollution. Japan's government is looking at alternative energy methods to solve its air pollution problems. Japan once used nuclear power plants to generate one-third of its electricity, but after a devastating earthquake and tsunami destroyed one of the nuclear power plants, the Japanese people demanded that all nuclear power facilities be closed. Now the government is investigating solar, wind, and other forms of clean and renewable energy sources. It is also exploring ways to make the existing nuclear power plants safer.

Top: Like much of Asia, Japan experiences monsoons, which can be both a blessing and a curse. **Above:** Because the Japanese abandoned nuclear power, they rely more on fossil fuels, which are costly and contribute to air pollution. **Left:** Japan's efforts to use cleaner sources of energy, like wind and solar power, will be expensive, but this investment will help reduce the country's overall pollution levels.