THE NEWSPAPER AS RESOURCE IN GEOGRAPHY TEACHING

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The newspaper constitutes a valuable resource in geography teaching. It is a rich, readily available and inexpensive source of information and instructional materials for lessons in geography, history and other subjects. A study of events reported in newspapers can help pupils realize the role and relevance of geography in their lives.

The newspaper can be used as a motivational device to stimulate critical thinking and debate. It can also be used to develop a critical and thoughtful attitude towards current events and heighten awareness of issues that affect the nation. In this way pupils can be trained to be well informed and concerned citizens.

The following are suggestions on ways of using the newspaper to promote interest in learning and to teach geographical concepts and skills in the classroom.

A lesson on vulcanicity can be made real and interesting through a study of a report on the recent eruption of Nevado del Ruiz. Based on the published photographs, graphics and articles the teacher can design and structure activities to help pupils:

1. develop skills in the use of an atlas.
2. explain processes leading to the eruption of the volcano.
3. describe the extent and nature of damage caused by the eruption.
4. develop empathy towards the people affected by the disaster.
5. apply their understanding of plate tectonics and vulcanicity to other situations.
LESSON

Nevado del Ruiz – A Killer Volcano

Learning Activities

1. Using an atlas trace the outline of Colombia. On your outline map, mark and name Nevado del Ruiz volcano, Bogota, Armero, Mariquita and Chinchina.

2. Prior to its eruption on 13th November 1985, Nevado del Ruiz had been lying dormant for nearly 400 years. What was the cause of its sudden eruption? (See Annex I) What were the consequences?

3. Describe the nature and extent of the damage caused by the volcanic eruption.

4. Give two reasons for the high death toll in Armero. How did the survivors escape death?

5. How did the eruption of Nevado del Ruiz affect the neighbouring country of Venezuela?
Killer volcano

Impact of the eruption...

- Tons of rocks and ash blasted as high as 8,000 m
- Disaster area of 190 sq km contains 1 mil people
- Eruption and heavy rains lead to breaking up of glacial ice on the snow-capped mountain. This causes a sea of mud, rocks and ash to cover surrounding areas
- Chinchina hit by floods
- Marquesita hit by floods
- Armero almost completely destroyed by eruptions
- Bogota
ARMERO, FM. — A sea of mud stretching almost as far as the eye can see — virtually all that is left of this central Colombian town turned into a tomb for most of its 21,000 people by one of the worst volcanic eruptions of the century.

Armero vanished under an avalanche of mud and water that thundered down the flanks of Nevado del Ruiz volcano on Wednesday night. The steeple of the local church and rooftops were the only visible structures in the sea of mud, along with the town cemetery on higher ground.

Armero took the brunt of the volcano's fury — "maybe only 100 houses are left," a rescue pilot reported — but eight neighbouring towns were also hit with some loss of life.

"Twenty thousand Colombians died in the tragedy, according to our estimate. The true number will never be known," Health Minister Rafael De Sabia told reporters after visiting the disaster area 170 km west of the capital, Bogota. It was the worst volcanic disaster since almost 30,000 people were killed in Martigny 50 years ago.

Colombian officials said 25,000 people were involved in the 5,000-metre Nevado del Ruiz eruption. Rescuers dug in the sea of mud in the hope of finding more survivors.

A hall-naked woman, most of her clothes ripped away by the force of the avalanche, was pulled to safety, apparently unhurt. Other survivors, their faces caked with mud, stumbled among the ruins and said they escaped the dirty grey tide of death by scrambling up trees or clinging to logs swept along by the torrent.

Officials coordinating rescue efforts declared Armero "once called the "White City of Colombia" because of its crops of cotton and rice — consecrated ground so that corpses could be left buried under the mud and rescuers in the stenchy Roman Catholic country could concentrate on finding survivors.

The tragedy began when the volcano's ice cap melted, starting a chain of avalanches. Witnesses described fearsome scenes of devastation as solid rock and ash spat up to 5,000 metres into the sky.

The ash cloud drifted 500 km to the border with Venezuela.

Although there had been ominous rumblings for several months, few people were prepared for sudden inaction.

Mrs. Clara Ines Correa, flown to Bogota from Armero with both legs broken, told reporters how her whole family was trapped underground while she escaped by climbing a tree.

"People started running around like crazy and many were swallowed up by the earth," she said. Survivors, some buried up to the neck, were dragged away on makeshift sleds in the mud. Others spent hours clinging to each other in treetops before being rescued.

AFP, AP, Reuter, UPI.
6. Look at Figures 1 and 2 carefully:
   (a) What relationship is there between the locations of volcanic eruptions and the earth's major plates?
   (b) Why are volcanic eruptions and earthquakes associated with the movement of the earth's plates?
   (c) How does the location of Nevado del Ruiz help to explain its violent eruption?

Source:

Fig. 1

Fig. 2
As a means of increasing awareness of environmental issues and highlighting the importance of conserving water especially in Singapore and other exhaustible resources, the geography teacher may use the following reports to stimulate discussion and debate.

LESSON

Water – A Valuable Resource

Learning Activities

In his speech at the opening of the Bedok Waterworks, the Acting Trade and Industry Minister Brig. General Lee Hsien Loong reminded Singaporeans of the need to save water.

1. Why is it important for Singaporeans to conserve water?

2. Besides reservoirs and rivers what alternative sources of water can we turn to?

3. Would Singapore have sufficient water:
   (a) in the event of a prolonged drought?
   (b) if the present population is doubled?
   (c) to meet the needs of a growing number of industries?

4. According to the New Straits Times of 7th September 1986, half of our daily water supply comes from Johore (Malaysia):
   (a) Why is it necessary for Singapore to obtain such a large part of its water supply from Johore?
   (b) Can Singapore reduce its dependence on Johore for water?
   (c) What problems are likely to occur in view of Johore's increasing needs?
Power, gas likely to be cheaper

B-G Lee reminds Singaporeans of need to save water

By WONG AI KWEI

INDICATIONS are that electricity and gas will be cheaper by 5 to 10 per cent from next month.

Brig-Gen Lee Hsien Loong said yesterday: “There is some possibility that we may reduce the charges.”

The Acting Trade and Industry Minister told reporters that the reduction is likely when the next quarterly review of electricity and gas charges is done for the three months from November to January.

“Fuel prices have come down and it’s likely that some of it can be passed on,” he told reporters after he opened the Bedok Waterworks.

With the last review in August, electricity charges were reduced for the fourth consecutive quarter because of lower oil prices. So far, the Public Utilities Board has reduced rates by a total of 18 per cent since November last year.

But there was no change in the charge for gas in August.

In his speech at the opening ceremony, Brig-Gen Lee reminded Singaporeans of the need to save water.

He said that if demand continued to grow at the present rate, Singapore would have reached the limit of all its existing water sources before the turn of the century.

In 1980, Singaporeans used 146 million cubic metres of water. Last year, 308 million cubic metres — one-quarter more than in 1980 — was consumed, even though the population increased by hardly 6 per cent.

“More water will have to come from Johor, provided agreement can be reached with the Malaysian government on joint development of the Johor River. This highlights the crucial importance of conserving water,” he said.

Brig-Gen Lee also noted that there are no more major domestic sources of water which could be developed.

The highly automated and mechanised Bedok Waterworks is part of the S$75 million Sungei Seletar/Bedok water scheme which serves the eastern part of the island.

The waterworks, which employs only 38 people (some 60 per cent fewer than less mechanised waterworks), can treat 135,000 cubic metres of water a day. It treats water from both the Bedok and Sungei Seletar reservoirs.

An interesting feature of the Bedok plant is that it is equipped to process lower grade storm-water.

The Sungei Seletar/Bedok water scheme, a network of drains channel dirty storm-water from Tampines, Yishun and Bedok new towns to the two reservoirs.

Brig-Gen Lee also noted that the whole scheme cost four times more than the Western Catchments Scheme which is of comparable size, making it the most expensive that the PUB has undertaken.

“Yet, as the demand for water has increased year by year, the PUB has had no alternative but to proceed with the development,” he said.
JOHORE has been supplying water to Singapore for over half a century (since 1927). Up to today, more than half of the Island republic’s daily water supply comes from Johore. Nearly 150 million gallons per day (including 122 mgd raw water) is piped across the Causeway.

Both countries have signed two water agreements. According to the 1961 agreement, which is valid for 99 years (effective up to year 2011), Singapore is allowed to draw water from the agreed intake points at Gunung Pulai (the original) and longest existing lifeline), Sungai Tebrau and Sungai Segulai.

The supply from Gunung Pulai is 14 mgd of treated water, from Sungai Tebrau 12 mgd of raw water for treatment in Singapore, and from Segulai 94 mgd of treated water. Johore is entitled to 12 per cent of the amount of water supplied to Singapore daily (or more, subject to the maximum production capacity of the Gunung Pulai catchment reserve).

According to the 1961 agreement, Singapore pays for 1,000 gallons of raw water at the Government. Singapore also pays an additional rental of 2.5 per cent on the treated water supplied to the PUB for treatment in Singapore. The average amount of treated water supplied to Johore is 30 mgd.

According to the 1962 agreement which is valid for 99 years (that is, up to the year 2045), Singapore is entitled to draw up to 200 mgd of water from the Sungai Johor at Kota Tinggi. Johore is entitled to 15 per cent of the amount of water supplied to Singapore daily from this source.

The PUB has a treatment plant at Kota Tinggi which supplies 80 mgd of treated water. The PUB has asked for an increase in the supply to be increased to 110 mgd.

The PUB has three treatment plants at Gunung Pulai, 14 mgd; Segulai, 20 mgd; and Kota Tinggi, 90 mgd. The total water treatment capacity of the three treatment plants is 106 mgd, and which 30 mgd is presently supplied to Johore. The bilateral cooperation has been mutually beneficial. Raw water provides a source of revenue to the Johore Government, which is equal to nearly $560,000 per annum.

The PUB also earns revenue from the sales of treated water to PWD Johore, which amounts to $15,000 per day or nearly $7.3 million a year. The PUB plans to pipe an additional 100 mgd of treated water to Johore. It was requested to carry out a study and to recommend development strategies. The terms of reference require the consultants to determine the maximum amount of water resources available from the Johore River basin and take into consideration the future water needs of both Johore and Singapore, to recommend a plan of action to address the development of these resources.

Feasibility

Jointly funded by both countries, the feasibility study was started last December and is scheduled for completion by this year. The preliminary findings so far have been promising. We have identified several reservoir sites that can act as "regulation" reservoirs to help balance the water requirements.

Much has been achieved since then. A strategic reserve has been set up and increased from 1990 onwards. As the 1993 agreement provides for the maximum abstraction of 250 mgd only and as there is already a technical constraint that such an abstraction is not possible, the PUB and PUB have been in consultation to construct an additional reservoir. The existing chain of 13 major reservoirs (many of them are interconnected) can hold 27 billion gallons of water, of which 90 per cent can be used for domestic and industrial consumption in Johore.

The installed capacity is geared to maximum production that can meet Singapore's requirements. However, the development costs have been high. The PUB spent more than $22 million on new water projects during 1975-82. Another $170 million would be required for new projects from 1983 to 1985.

Costs

Opening the national Save Water Campaign a couple of years ago, Trade and Industry Minister Dr Tony Tan said: "High development costs will inevitably be reflected in the price consumers have to pay for water in the years ahead. We must remember that the time when money cannot be spent on water we need is near."

Singapore is prepared to pay for costly options if necessary. The perennial water problem is being addressed with a sense of urgency in Singapore. Prime Minister Lee Kuan Yew said in his New Year message in 1973: "We must develop our water resources to meet the full. We should be able to collect and use between 35 and 40 per cent of the daily average of 700 million gallons of rainfall (23 inches per year) by 1990."

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Travel ads, statistical data and other materials in newspapers can also be used as a basis for developing reference skills, competence in computations and application of geographical knowledge and principles. The following travel ad on Phuket can be used to achieve these goals.

**HOT SPA++**

*Phang Nga + Phuket Cabana*

7 days $649 Dep Friday

The perfect health tour. Enjoy:
- Asia's largest hot mineral water thermal pools
- Soothing, temperate climate
- Deluxe hotels with comprehensive facilities
- Picture-book scenery of Phang-Nga
- Clean, unspoilt beaches in Phuket
- Free transfer to Jansom Thara Hot Spa

**anglo french travel**

#10-03, Asia Chambers, Tel: 222 4222
LESSON

Phuket – A Tropical Island

Learning Activities

1. (a) Where is Phuket? Locate Phuket with the help of an atlas.
   (b) How far is Phuket from Singapore?
   (c) In which direction would you fly if you travel to Phuket by plane?
   (d) According to the advertisement, what activities can holiday makers look forward to?

2. Your flight to Phuket departs at 0900 hours Singapore time. What would be the time in Phuket when you arrive?

3. What features of geographical interest would you be able to see in Phuket?

4. Phuket is described as a 'tropical island paradise'. What does this description tell you about the climate and scenery of Phuket?

5. (a) Using an atlas, plan an overland journey from Singapore to Phuket. Name the important towns that you will pass through on your journey.
   (b) In what ways do you expect the landscape of Phuket to be different from Singapore. Why?

These are but a few examples of the many activities that a teacher can design to enrich and enliven teaching and learning in the classroom. Geography taught in this way would have a greater appeal and relevance to pupils.
The Colombian eruption, like most volcanic events, is the result of continental wanderlust. According to the widely accepted theory of plate tectonics, the earth’s crust forms the top layer of about a dozen major plates and several smaller ones, which range in thickness from 20 miles to 150 miles. These sections float on a gooey layer of partly molten rock known as the asthenosphere. As they move in different directions at an average speed of several inches a year, the plates collide, dive under and buckle against one another, crinkling up into a mountain range here, yanking apart to form a rift valley or oceanic ridge there. Such tectonic clashing was responsible for the violent earthquake that shook Mexico City two months ago, when the Cocos plate of the Pacific, temporarily stuck in its slow but inexorable plunge under the North American plate, suddenly jarred loose and lurched ahead. Last week’s burst involved a similar movement of plates, but the result was entirely different. Extending along most of the coast of South America, the dense Nazca plate of the Pacific, moving eastward, subducts, or descends beneath, the lighter mass of the South American plate, which is moving westward. As the oceanic plate dives deeper into a region of high temperature and pressure some 60 miles to 125 miles below the earth’s surface, rock in the area begins to soften and form magma, molten rock. Says Robert Christiansen, a volcano specialist with the U.S. Geological Survey (USGS) in Menlo Park, Calif: “This is one area in which our knowledge is the least advanced.”

[Diagram of plate tectonics and volcano formation]

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