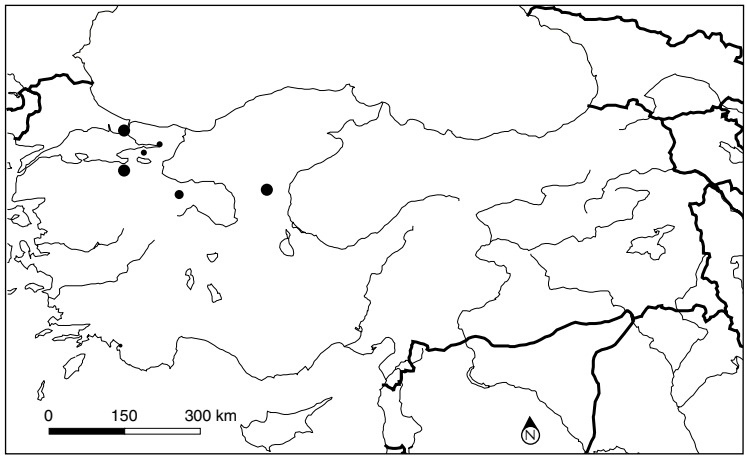
# Earthquakes — Turkey

acaranda ATLAS FIFTH EDITION

REFERENCE: THE ACTIVE EARTH PAGE 9 JAPAN AND KOREA PAGE 153

**DATELINE:** On 18 August 1999 at 3 am, an earthquake measuring 7.0 on the Richter scale struck the north western coast of Turkey bordering the Sea of Marmara. The epicentre of the earthquake was at Izmit, but shock waves were felt as far away as Ankara, 440 km to the east. The cities of Bursa, Golkuk and Eskisehir also suffered heavy casualties. As many as 40 000 people were killed or injured as buildings collapsed in Turkey's worst ever natural disaster. Aftershocks of 4.8 on the Richter scale in the days following the earthquake caused further damage to property. About 96 per cent of Turkey lies in a 'high risk' earthquake zone, and further earthquakes are feared.

1. Using the outline map of Turkey provided and pages 169 and 158 of the *Jacaranda Atlas*, mark in the following features:
   - **(a)** the cities of **Izmit, Bursa**, **Golkuk**, **Eskisehir**, **Istanbul**, **Ankara**
   - **(b)** the countries of **Turkey**, **Greece** and **Bulgaria**
   - **(c)** the **Sea of Marmara**, the **Black Sea** and the **Mediterranean Sea**
   - **(d)** four radiating circles with the first enclosing Izmit at the epicentre and the fourth circle through Ankara to show the extent of the shock waves.

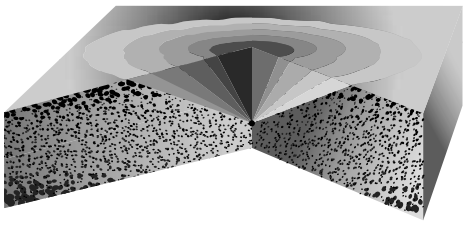


Turkey

2. Use the information on page 9 of the *Jacaranda Atlas*, and the information in the **Dateline** above to fill in the blanks in the following passage.

_____ are caused by movements in the earth's _____ where the continental _____ converge. The point on the earth's surface from which the shock waves radiate is called the _____. In the Turkey earthquake this point was located at _____. The area underground where the stresses have built up is called the _____. The shock waves _____ in intensity the further they are from the _____. In Turkey shock waves were felt as far away as _____. A similar earthquake in Turkey and Russia in 1988 which also measured _____ on the Richter scale killed _____ people.

3. Using the information and the diagrams on page 9 and 153 of the *Jacaranda Atlas*, add the following labels to the appropriate blank diagrams to explain the nature of an earthquake: **fault, crust, mantle, epicentre, focus, strongest shock wave, weakest shock wave**.



4. Use the information on page 153 of the *Jacaranda Atlas* to decide whether the earthquake in Turkey was a minor, moderate or major earthquake according to the Richter scale. _____