<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Mapping Technology</td>
<td>51</td>
</tr>
<tr>
<td>Geography's Spatial Science Perspective: Using Vertical Exaggeration</td>
<td>52</td>
</tr>
<tr>
<td>to Portray Topography</td>
<td></td>
</tr>
<tr>
<td>Digital Mapmaking</td>
<td>52</td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>53</td>
</tr>
<tr>
<td>Remote Sensing of the Environment</td>
<td>56</td>
</tr>
<tr>
<td>Aerial Photography</td>
<td>57</td>
</tr>
<tr>
<td>Specialized Remote Sensing Techniques</td>
<td>57</td>
</tr>
<tr>
<td>Multispectral Remote Sensing Applications</td>
<td>59</td>
</tr>
<tr>
<td>Geography's Physical Science Perspective: Polar versus Geostationary</td>
<td>60</td>
</tr>
<tr>
<td>Satellite Orbits</td>
<td></td>
</tr>
<tr>
<td>Define &amp; Recall</td>
<td>62</td>
</tr>
<tr>
<td>Discuss &amp; Review</td>
<td>62</td>
</tr>
<tr>
<td>Consider &amp; Respond</td>
<td>63</td>
</tr>
<tr>
<td>Map Interpretation: Topographic Maps</td>
<td>64</td>
</tr>
<tr>
<td>Earth in Space and Solar Energy</td>
<td>66</td>
</tr>
<tr>
<td>The Solar System</td>
<td>68</td>
</tr>
<tr>
<td>The Solar System</td>
<td>68</td>
</tr>
<tr>
<td>Geography's Environmental Science Perspective: Solar Energy</td>
<td>69</td>
</tr>
<tr>
<td>The Sun and Its Energy</td>
<td>69</td>
</tr>
<tr>
<td>The Planets</td>
<td>71</td>
</tr>
<tr>
<td>Life beyond Earth?</td>
<td>72</td>
</tr>
<tr>
<td>The Earth-Sun System</td>
<td>74</td>
</tr>
<tr>
<td>Solar Energy and Atmospheric Dynamics</td>
<td>75</td>
</tr>
<tr>
<td>Movements of Earth</td>
<td>76</td>
</tr>
<tr>
<td>Sun Angle, Duration, and Insolation</td>
<td>78</td>
</tr>
<tr>
<td>The Seasons</td>
<td>80</td>
</tr>
<tr>
<td>Geography's Physical Science Perspective: Using the Sun’s Rays</td>
<td>81</td>
</tr>
<tr>
<td>to Measure the Spherical Earth-2200 Years Ago</td>
<td></td>
</tr>
<tr>
<td>Lines on Earth Delimiting Solar Energy</td>
<td>82</td>
</tr>
<tr>
<td>The Analemma</td>
<td>83</td>
</tr>
<tr>
<td>Variations of Insolation with Latitude</td>
<td>83</td>
</tr>
<tr>
<td>Define &amp; Recall</td>
<td>85</td>
</tr>
<tr>
<td>Discuss &amp; Review</td>
<td>85</td>
</tr>
<tr>
<td>Consider &amp; Respond</td>
<td>85</td>
</tr>
<tr>
<td>The Atmosphere, Temperature, and the Heat Budget</td>
<td>86</td>
</tr>
<tr>
<td>Characteristics of the Atmosphere</td>
<td>88</td>
</tr>
<tr>
<td>Composition of the Atmosphere</td>
<td>88</td>
</tr>
<tr>
<td>Atmospheric Environmental Issues</td>
<td>89</td>
</tr>
<tr>
<td>Geography’s Spatial Science Perspective: Why Are Ozone Holes Located</td>
<td>92</td>
</tr>
<tr>
<td>at the Poles?</td>
<td></td>
</tr>
<tr>
<td>Vertical Layers of the Atmosphere</td>
<td>92</td>
</tr>
<tr>
<td>Effects of the Atmosphere on Solar Radiation</td>
<td>95</td>
</tr>
</tbody>
</table>
Idealized Model of Atmospheric Circulation p. 130
Conditions within Latitudinal Zones p. 131
Career Vision: Sandra Diaz p. 132
The Effects of Seasonal Migration p. 133
Longitudinal Differences in Winds p. 134
Upper Air Winds p. 134
Ocean Currents p. 136
El Nino p. 139
El Nino and the Southern Oscillation p. 139
El Nino and Global Weather p. 141
Define &amp; Recall p. 142
Discuss &amp; Review p. 142
Consider &amp; Respond p. 143
Moisture, Condensation, and Precipitation p. 144
The Hydrologic Cycle p. 146
Water in the Atmosphere p. 147
The Water Budget and Its Relation to the Heat Budget p. 147
Saturation and Dew Point p. 148
Humidity p. 149
Sources of Atmospheric Moisture p. 151
Rate of Evaporation p. 151
Potential Evapotranspiration p. 152
Condensation p. 152
Condensation Nuclei p. 153
Fog p. 153
Other Minor Forms of Condensation p. 155
Clouds p. 156
Geography's Environmental Science Perspective: Cumulus Congestus: An Aspiring Thunderstorm p. 157
Precipitation Processes p. 161
Major Forms of Precipitation p. 162
Factors Necessary for Precipitation p. 163
Geography's Physical Science Perspective: The Lifting Condensation Level (LCL) p. 164
Distribution of Precipitation p. 166
Variability of Precipitation p. 170
Define &amp; Recall p. 172
Discuss &amp; Review p. 172
Consider &amp; Respond p. 173
Air Masses and Weather Systems p. 174
Air Masses p. 176
Modification and Stability of Air Masses p. 176
North American Air Masses p. 176
Soil Horizons p. 340
Factors Affecting Soil Formation p. 340
Parent Material p. 341
Organic Activity p. 341
Climate p. 342
Career Vision: Amy Jo Steffen p. 343
Land Surface Configuration p. 344
Time p. 344
Soil-Forming Regimes p. 347
Laterization p. 347
Podzolization p. 347
Calcification p. 347
Geography's Environmental Science Perspective: Slash-and-Burn Agriculture Adds Nutrients to Tropical Soils p. 348
Regimes of Local Importance p. 349
Soil Classification p. 350
The NRCS Soil Classification System p. 350
NRCS Soil Orders p. 351
Soils as a Critical Natural Resource p. 356
Define &amp; Recall p. 358
Discuss &amp; Review p. 358
Consider &amp; Respond p. 359
Earth Materials, the Lithosphere, and Plate Tectonics p. 360
Minerals and Rocks p. 362
Minerals p. 362
Rocks p. 363
Earth's Planetary Structure p. 371
Earth's Core p. 371
Earth's Mantle p. 372
Earth's Crust p. 373
Continents in Motion: The Search for a Unifying Theory p. 374
Continental Drift p. 374
Supporting Evidence for Continental Drift p. 375
Geography's Spatial Science Perspective: Paleomagnetism: Evidence of Earth's Ancient Geography p. 376
Plate Tectonics p. 377
Seafloor Spreading and Convection Currents p. 378
Tectonic Plate Movement p. 379
Hot Spots in the Mantle p. 384
Growth of Continents p. 384
Geography's Physical Science Perspective: Isostasy: Balancing the Earth's Lithosphere p. 385
Define & Recall p. 445
Discuss & Review p. 445
Consider & Respond p. 445
Underground Water and Karst Landforms p. 446
Occurrence and Supply of Groundwater p. 448
Groundwater Zones and the Water Table p. 448
Factors Affecting the Distribution of Groundwater p. 450
Career Vision: Carmen Yelle p. 451
Availability of Groundwater p. 452
Wells p. 453
Geography's Physical Science Perspective: Monitoring Groundwater Flow p. 454
Artesian Wells p. 454
Landform Development by Solution p. 455
Karst Landscapes and Landforms p. 455
Geography's Environmental Science Perspective: Sinkhole Formation p. 458
Limestone Caverns and Cave Features p. 460
Geothermal Water p. 463
Define & Recall p. 464
Discuss & Review p. 464
Consider & Respond p. 465
Map Interpretation: Karst Topography p. 466
Fluvial Processes and Landforms p. 468
Surface Runoff p. 470
The Stream System p. 471
Drainage Basins p. 473
Geography's Spatial Science Perspective: Watersheds as Critical Natural Regions p. 474
Drainage Density and Pattern p. 475
Stream Discharge p. 477
Stream Energy p. 479
Career Vision: Andy Wohlsperger p. 481
Fluvial Gradational Processes p. 482
Erosion by Streams p. 482
Stream Transportation p. 483
Stream Deposition p. 484
Channel Patterns p. 485
Land Sculpture by Streams p. 486
Features of the Upper Course p. 487
Features of the Middle Course p. 487
Features of the Lower Course p. 488
Deltas p. 490
Base Level Changes and Tectonism p. 492
Stream Hazards
Geography's Environmental Science Perspective: Restoring the Everglades
The Importance of Surface Waters
Streams
Lakes
Quantitative Fluvial Geomorphology
Define & Recall
Discuss & Review
Consider & Respond
Map Interpretation: Fluvial Landforms
Arid Landforms and Eolian Processes
Surface Runoff in the Desert
Water as a Gradational Agent in Arid Lands
Arid Region Landforms of Fluvial Erosion
Arid Region Landforms of Fluvial Deposition
Wind as a Gradational Agent
Wind Erosion and Transportation
Wind Deposition
Geography's Environmental Science Perspective: Invasions by Sand Dunes
Landscape Development in Deserts
Define & Recall
Discuss & Review
Consider & Respond
Map Interpretation: Desert Landforms
Map Interpretation: Eolian Landforms
Glacial Systems and Landforms
Glacier Formation and the Hydrologic Cycle
Geography's Physical Science Perspective: Glacial Ice Is Blue!
Types of Glaciers
Features of an Alpine Glacier
Equilibrium and the Glacial Budget
How Does a Glacier Flow?
Glaciers as Agents of Gradation
Erosional Landforms Produced by Alpine Glaciation
Depositional Landforms Produced by Alpine Glaciation
Continental Ice Sheets
Existing Ice Sheets
Pleistocene Ice Sheets
Movement of Continental Ice Sheets
Geography's Spatial Science Perspective: The Driftless Area-A Natural Region
Ice Sheets and Erosional Landforms
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map Interpretation: Passive-Margin Coastline</td>
<td>614</td>
</tr>
<tr>
<td>SI Units</td>
<td>617</td>
</tr>
<tr>
<td>Topographic Maps</td>
<td>619</td>
</tr>
<tr>
<td>Understanding and Recognizing Some Common Rocks</td>
<td>621</td>
</tr>
<tr>
<td>Glossary</td>
<td>625</td>
</tr>
<tr>
<td>Index</td>
<td>643</td>
</tr>
</tbody>
</table>

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.