MASSACHUSETTS
Science and Technology/Engineering Curriculum Framework
Earth and Space Science, Grades 6–8
Earth Science © 2005

LEARNING STANDARD	PAGE REFERENCES
Mapping the Earth	
1. Recognize, interpret, and be able to create models of the earth's common physical features in various mapping representations, including contour maps.	SE: 160-163, 164-170 *Launch Lab* 153 *MiniLAB* 156 *Lab* 171 *Model and Invent Lab* 172-173 TWE: SCB 152E DI 155, 161 R 170
Earth's Structure	
2. Describe the layers of the solid earth, including the lithosphere, the hot convecting mantle, and the dense metallic core.	SE: 280, 309-311 TWE: CC 309 DI 310 QD 310 UAA 310 CFU 311
Heat Transfer in the Earth's System	
3. Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through the earth's system.	SE: 435-437 *MiniLAB* 437 *Section Review* 438 TWE: DI 436 UAA 436 CFU 438
4. Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere.	SE: 437-438, 439-443, 454-461, 462-469 *Design Your Own Lab* 444-445 TWE: A 438, 443 CFU 443
Earth's History	
5. Describe how the movement of the earth's crustal plates causes both slow changes in the earth's surface (e.g., formation of mountains and ocean basins) and rapid ones (e.g., volcanic eruptions and earthquakes).	SE: 272-275, 276-278, 280-289 *Lab* 279 TWE: SCB 270E-F ACT 274 DIS 278 LD 282 VL 284 A 289

LEARNING STANDARD	PAGE REFERENCES
6. Describe and give examples of ways in which the earth's surface is built up and torn down by natural processes, including deposition of sediments, rock formation, erosion, and weathering.	SE: 182-187, 210-214, 215-220, 222-227, 238-248 *Design Your Own Lab* 200-201 *Launch Lab* 209 *MiniLAB* 211 TWE: SJ 183 CC 184
7. Explain and give examples of how physical evidence, such as fossils and surface features of glaciation, supports theories that the earth has evolved over geologic time.	SE: 272-275, 362-369, 370-375, 377-381 *MiniLAB* 274 *Launch Lab* 361 *Lab* 376 TWE: VL 368 DIS 372 IL 374
The Earth in the Solar System	
8. Recognize that gravity is a force that pulls all things on and near the earth toward the center of the earth. Gravity plays a major role in the formation of the planets, stars, and solar system and in determining their motions.	SE: 210, 529-530, 637, 690-694 *MiniLAB* 641, 699 TWE: TFYI 529 SCB 658E V 693
9. Describe lunar and solar eclipses, the observed moon phases, and tides. Relate them to the relative positions of the earth, moon, and sun.	SE: 527-530, 666-670 *Science Online* 669 *Lab* 675 TWE: IM 658F VL 668 QD 669 ACT 670 LD 670 R 674
10. Compare and contrast properties and conditions of objects in the solar system (i.e., sun, planets, and moons) to those on Earth (i.e., gravitational force, distance from the sun, speed, movement, temperature, and atmospheric conditions).	SE: 696-701, 702-709 *MiniLAB* 704 *Model and Invent Lab* 714-715 TWE: TFYI 697 QD 698 VL 698 ACT 703, 708 CC 705
11. Explain how the tilt of the earth and its revolution around the sun result in an uneven heating of the earth, which in turn causes the seasons.	SE: 492-493, 663-665 *Science Online* 665 *Lab* 680-681 TWE: IM 482F QD 664 R 665
12. Recognize that the universe contains many billions of galaxies, and that each galaxy contains many billions of stars.	SE: 740-741

Codes Used for TWE Pages

A	Assessment
ACT	Activity
CC	Curriculum Connection
CFU	Check for Understanding
DI	Differentiated Instruction
DIS	Discussion
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
QD	Quick Demo
R	Reteach
SCB	Science Content Background
SJ	Science Journal
TFYI	Teacher FYI
UAA	Use an Analogy
V	Visualizing
VL	Visual Learning