Last Practice
Mini-Regents!!

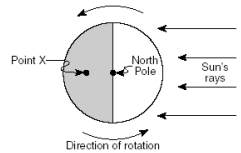
Side Lesson

Coriolis Effect

also caused by Earth's rotation

Side Lesson

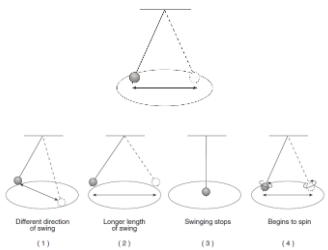
rotation causes - day & night



1

Evidence for Rotation

Foucault Pendulum



Side Lesson

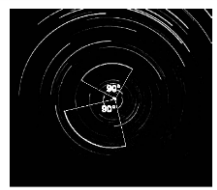
rate of rotation - 15°/hr

direction of rotation- counterclockwise (west →east)

Side Lesson

star trails

are also caused by Earth's rotation



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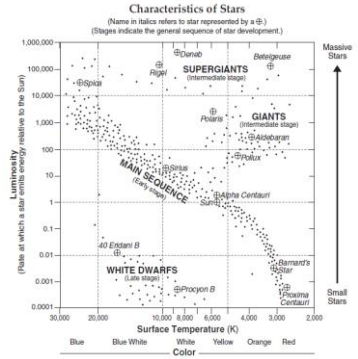
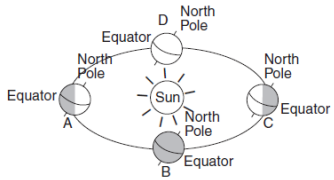


Side Lesson

revolution and seasons



4

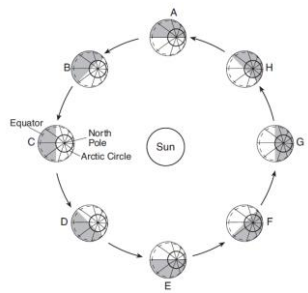
Stars make their own energy
by the process of
nuclear fusion

Hydrogen
is the "fuel" of a star

3

Seasons are caused by
23 ½° tilt
Earth's revolution
and
parallelism of Earth's axis

Side Lesson

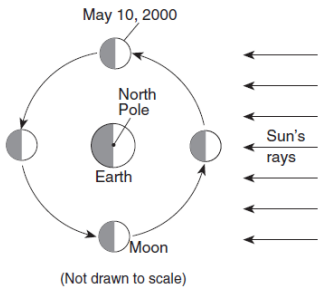


4

Side lesson:

Remember!
GRAVITY
is the force that pulls "stuff" together

5



Spring v. Neap Tides

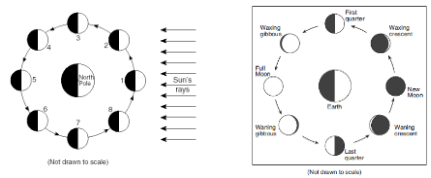
Spring
Straight line
Super big difference in tides

Neap
Ninety degree angle
Not much difference in tides

Side Lesson

one full set of Moon phases takes

29.5 days



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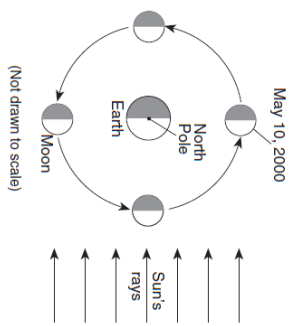
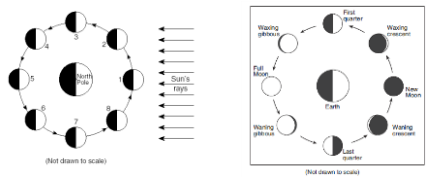


Side Lesson

phases of Moon are caused by

revolution of Moon



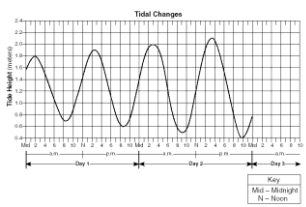
Side Lesson

Daily changes in tides are caused by

Moon revolution and Earth rotation

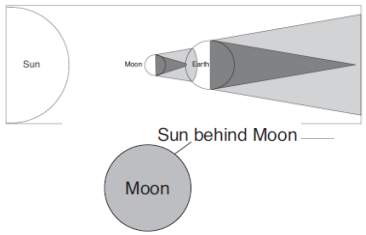
Time between two high tides

12.5 hours



Side Lesson

solar eclipse – Solar SME!!



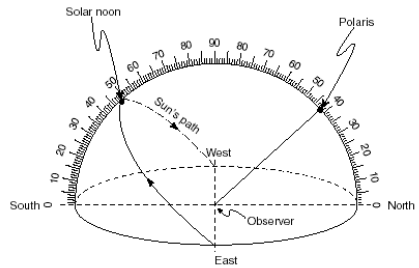
7 Terrestrial v. Jovian Planets

Solar System Data

Celestial Object	Mean Distance from Sun (million km)	Period of Revolution (d=days) (y=years)	Period of Rotation at Equator	Eccentricity of Orbit	Equatorial Diameter (km)	Mass (Earth = 1)	Density (g/cm³)
SUN	—	—	27 d	—	1,392,000	333,000.00	1.4
MERCURY	57.9	88 d	59 d	0.206	4,879	0.06	5.4
VENUS	108.2	224.7 d	243 d	0.007	12,104	0.82	5.2
EARTH	149.6	365.26 d	23 h 56 min 4 s	0.017	12,756	1.00	5.5
MARS	227.9	687 d	24 h 37 min 23 s	0.093	6,794	0.11	3.9
JUPITER	778.4	11.9 y	9 h 50 min 30 s	0.048	142,984	317.83	1.3
SATURN	1,426.7	29.5 y	10 h 14 min	0.054	120,536	95.16	0.7
URANUS	2,871.0	84.0 y	17 h 14 min	0.047	51,118	14.54	1.3
NEPTUNE	4,498.3	164.8 y	16 h	0.009	49,528	17.15	1.8
EARTH'S MOON	149.6 (0.386 from Earth)	27.3 d	27.3 d	0.055	3,476	0.01	3.3

Side Lesson

the NY celestial sphere



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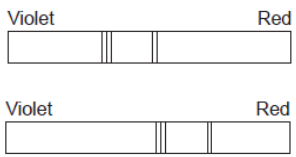
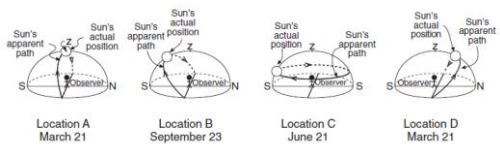


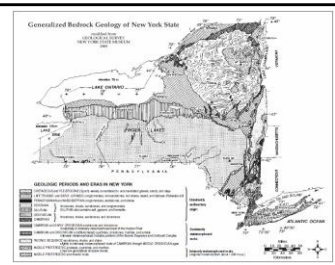
Red shift means that galaxies are **moving away from Earth** and is evidence that the **Universe is expanding**

8-10

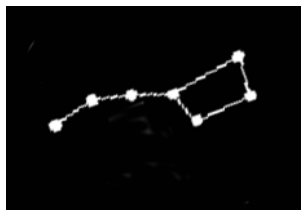


11

Altitude of Polaris = Latitude



Side Lesson:
FINDING Polaris
using Big Dipper



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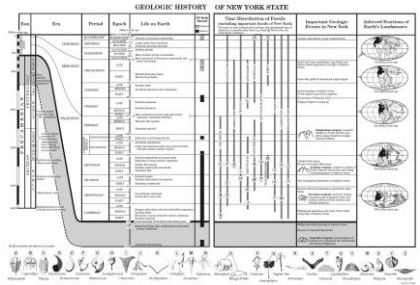


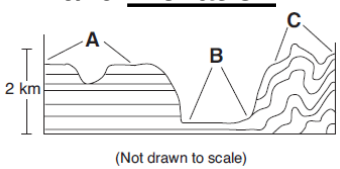
14

Index Fossils

Remains of organisms that lived
a **short time** but
over a large area

12

Landscapes are defined by their
Underlying Bedrock Structure
and **Elevation**



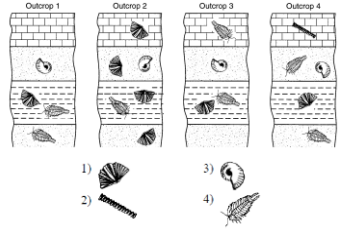
14

Index Fossils

14

Index Fossils

In one layer, but in all columns



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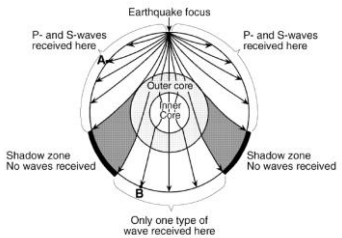
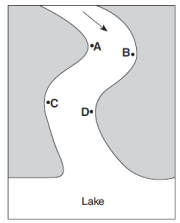


Side Lesson 5

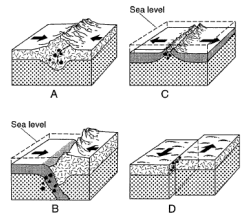
know what the profile view of a stream channel looks like



Side Lesson 6

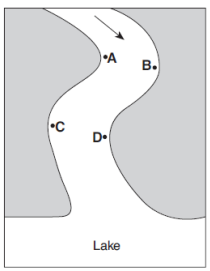
major earthquakes and volcanic eruptions occur on or near

plate boundaries



16

FOE DIS !!!!!!!!!!



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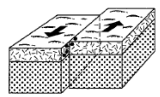
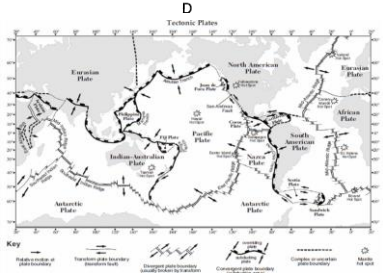


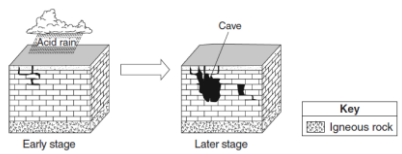


18

Side Lesson:

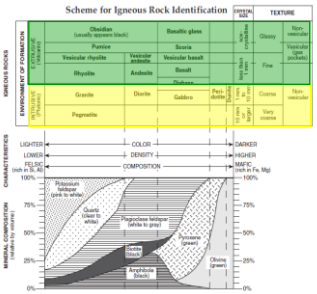
Chemical Weathering

affects calcite-rich rocks such as limestone



19

Faster cooling = smaller crystals



Side Lesson

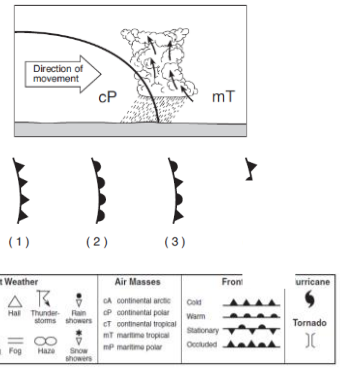
Interiors of planets / moons separate into layers based on

density

Scientists know about the interior of the Earth based on

analysis of seismic waves (earthquake wave studies)

22



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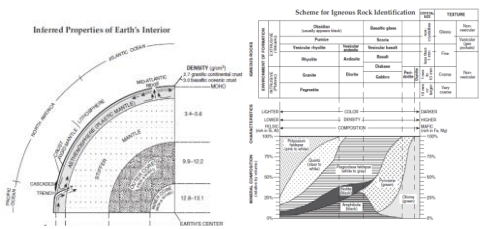
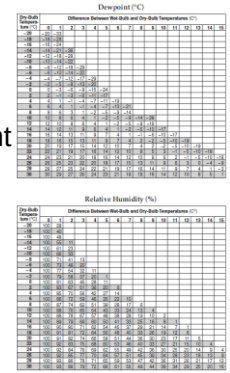


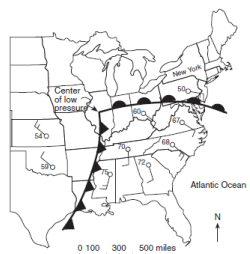
21

When the air temp = dewpoint the air is saturated (100% RH)



Side Lesson 8

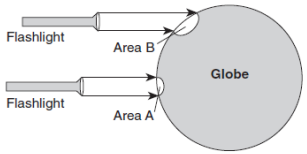
typical frontal pattern in northeast US



23

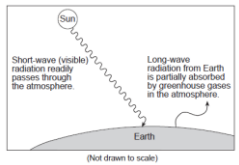
Equator
high angle / intense rays

Poles
low angle / low intensity rays



26

incoming radiation = visible light
outgoing radiation = infrared heat
infrared absorbed by
CO_2, methane and water vapor

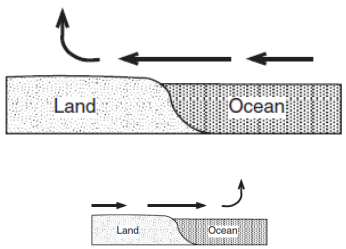


Side Lesson 9
Water's high specific heat and its effect on climate

Coastal Areas
cooler summers
warmer winters
(smaller temp range)

25

sea v. land breezes



Side Lesson 9
Water's high specific heat

Specific Heats of Common Materials

MATERIAL	SPECIFIC HEAT (Joules/gram • °C)
Liquid water	4.18
Solid water (ice)	2.11
Water vapor	2.00
Dry air	1.01
Basalt	0.84
Granite	0.79
Iron	0.45
Copper	0.38
Lead	0.13

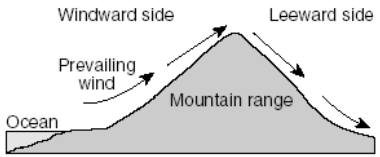
Water heats up and cools down SLOWLY

28

REC'D = clouds!!!

Rising air
Expands
Cools to the
Dewpoint

27



Side Lesson 10

gravity and glaciers deposit
unsorted/unlayered sediments

wind and water deposit
sorted/layered sediments

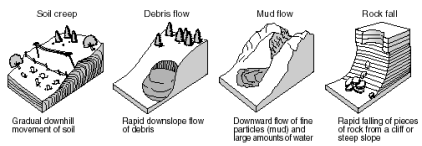
31

Infiltration occurs best:

1. permeable soil (big grains)
2. unsaturated soil
3. gradual (flatter) slopes

29

mass movement = erosion by gravity



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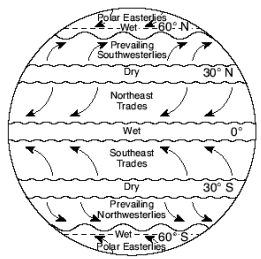
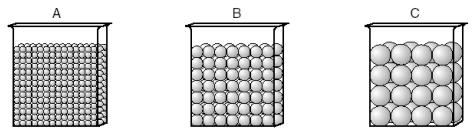


Side Lesson

Porosity, Permeability,
Capillarity, & Water Retention



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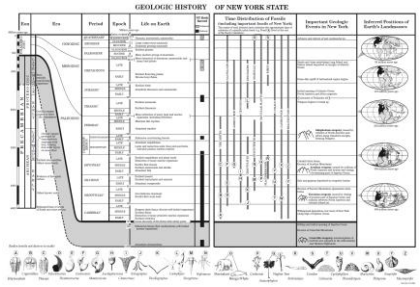

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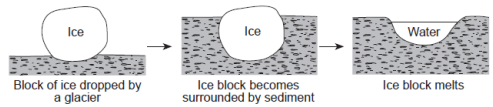

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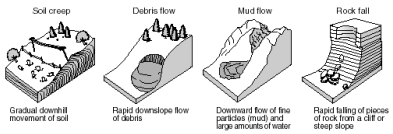

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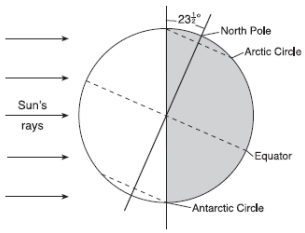
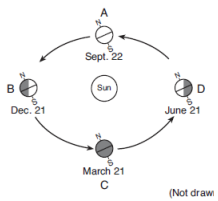
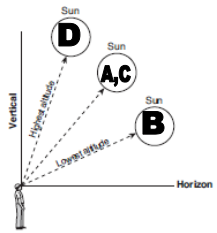


43





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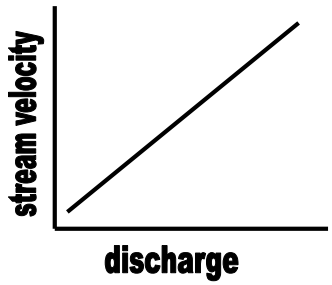

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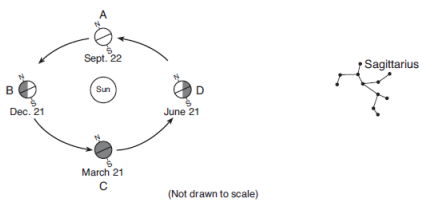

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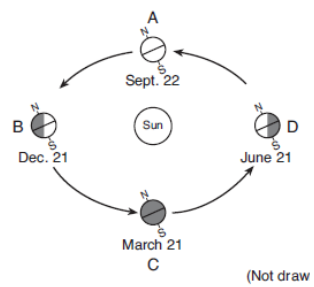
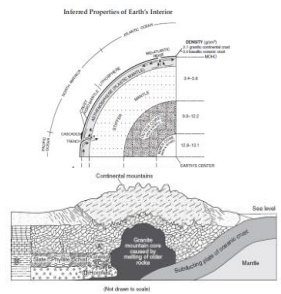


Rate of Revolution = 1º / day

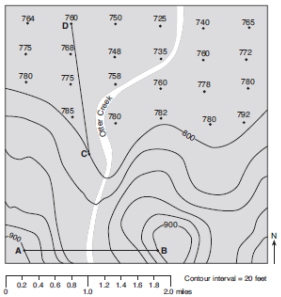
60



Ocean crust is more dense than continental crust

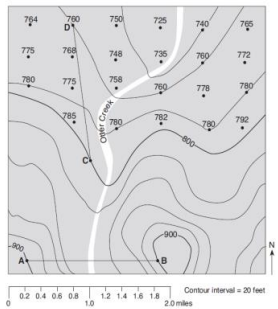
Continental crust is less dense than oceanic crust

47-48



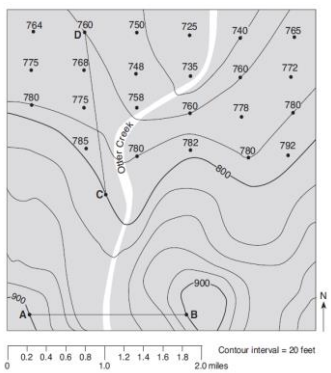
River flow is to the North or Northeast

contour lines bend upstream



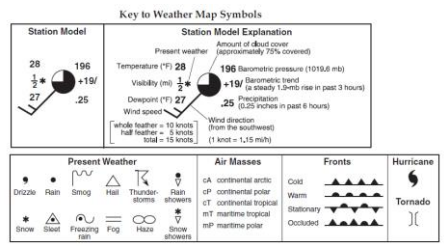
49

44

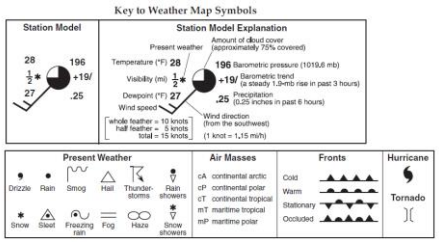


49-51

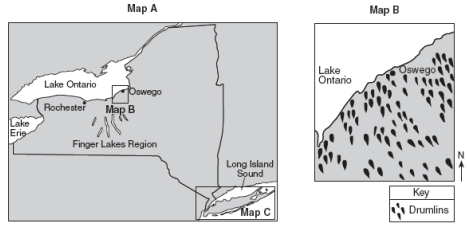
52



46



53-55



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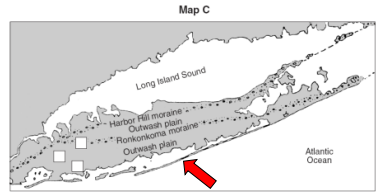
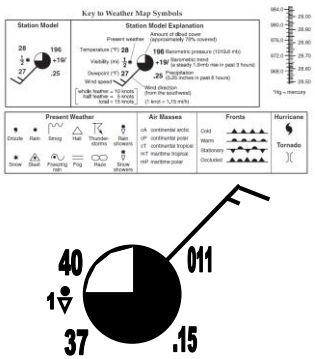


52



54