Unit 6 Study Guide

Chapter 12

1. What is a *nonrenewable resource*?
2. What is a *fossil fuel*? What are the big three?
3. What is the **history of energy use** in the United States? Check out figure 34.3 on page 401.
4. How do we measure **energy efficiency**?
5. What's the trend been for energy efficiency?
6. Compare the efficiencies of public transportation versus passenger cars.
7. Why do **hybrid vehicles** have higher efficiencies than standard cars?
8. Be familiar with the basic process of **electricity generation** and the transformations required.
9. Energy is lost during each transformation – why?
10. What is **coal** made from?
11. What are the 4 stages of coal formation? Hint: **P**eople **L**ike **B**alloon **A**nimals!
12. What is coal primarily used for?
13. What countries have the largest reserves of coal?
14. **Know the advantages and disadvantages of using coal as an energy source – page 410.**
15. What is **petroleum** made from?
16. What is petroleum primarily used for?
17. What are **petrochemicals**? Know a variety of examples.
18. Know the arguments for and against drilling in ANWR.
19. **Know the advantages and disadvantages of using petroleum as an energy source – page 412.**
20. What is **natural gas** mostly made of?
21. What is natural gas primarily used for?
22. How is natural gas extracted? What are possible consequences of this extraction method?
23. **Know the advantages and disadvantages of using natural gas as an energy source – page 413.**
24. What is **unconventional oil**? What are examples?
25. Compare conventional sources with unconventional sources.
26. What is the general future of fossil fuels?
27. What is **nuclear fission**? How is it different than nuclear fusion?
28. How does a nuclear power plant generate electricity?
29. What percent of uranium is U-235? What's the other 99%?
30. **Know the advantages and disadvantages of using nuclear energy as an energy source – page 420.**
31. Be familiar with the accidents at Three Mile Island, Chernobyl, and Fukushima.
32. How is radioactive waste currently stored?
33. What is a **half-life**? Be comfortable solving half-life calculations – page 422.
34. Check out the table on page 424 for comparisons of nonrenewable energy sources.

Chapter 13

35. What is the quickest, cheapest, and cleanest way to provide more energy, reduce pollution and environmental degradation, and slow global warming?
36. What are some simple ways to **conserve energy**?
37. How do lightbulbs compare in regards to efficiency? Look over the homework packet for more comparison.
38. What is **passive solar design**?
39. What is a *renewable energy source*? Know examples.
40. What is **biomass**?
41. What's the difference between modern and fossil carbon?
42. Where is biomass a major source of energy?
43. What is the biggest downside to biofuels?
44. **Know the advantages and disadvantages of using biomass and biofuel as an energy source – page 442.**
45. Be familiar with the different types of hydroelectricity: *run-of-the-river, water impoundment, tidal systems.*
46. Where does the energy ultimately come from?

47. Remind me, where is the largest dam in the world again?
48. Know the advantages and disadvantages of using hydroelectricity as an energy source – page 448.
49. What's the difference between passive and active solar technology?
50. What are **photovoltaic cells**?
51. What is a CST system?
52. Know the advantages and disadvantages of using solar energy as an energy source – page 452.
53. What is wind energy? Where does the energy ultimately come from?
54. What's the significance of North Dakota?
55. Know the advantages and disadvantages of using wind power as an energy source – page 454.
56. What is geothermal energy? Where does the energy ultimately come from?
57. Know the advantages and disadvantages of using geothermal energy as an energy source – page 456.
58. What is a fuel cell?
59. To operate efficiently, hydrogen power needs to be paired with another energy source – what is an ideal partner?
60. Know the advantages and disadvantages of using hydrogen fuel cells as an energy source – page 459.
61. Study the table on page 462 for a comparison of renewable energy sources.
62. Review all of the "Do The Math" sections – pages 404, 407, 422, & 436.

Now go quiz yourself with the questions on pages **428-429** and **469-475**!