

13.3 – 13.4 Study Guide

1. Give 3 examples of when GPE turns into KE
2. Give 3 examples of the KE turns into GPE
3. Think of the demo where the ball swung from the student's nose and back. Where is the max and min KE and GPE?
4. Think of the demo where the ball swung from the student's nose and back. Explain why it did not return to its original position.
5. In your own words, explain...
KE

GPE

Efficiency
6. A bird has 400 J of GPE when it is sitting on a ledge. It falls off the ledge and when it is 40 m above the ground, it has 120 J of GPE. How much KE does it have? How much ME does it have?

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21. What does GPE depend on?
22. What does KE depend on?
23. What does nuclear fission convert?
24. What does the law of conservation of energy state?
25. What happens to the GPE if you.....
- Double the mass? _____
 - Triple the mass? _____
 - $\frac{1}{2}$ the mass? _____
 - Double the height? _____
 - Triple the height? _____
 - $\frac{1}{4}$ the height? _____
 - Double the gravity? _____
26. What happens to the KE if you.....
- Double the mass? _____
 - Triple the mass? _____
 - Double the speed? _____
 - $\frac{1}{2}$ the mass? _____
 - $\frac{1}{2}$ the speed? _____
27. What is nuclear fission? Fusion? How can you remember the difference between the 2?

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28. What is the GPE of a block that has a mass of 700 g and is 400 cm above the ground?

29. What is the KE of an alien that is moving with a velocity of 3.9 m/s east and has a mass of 50 kg?

30. What is the KE of an alien that is moving with a velocity of 6.2 m/s north and has a mass of 600 g?

31. What is the mass of a block that has a GPE of 42 J and is 1000 mm above the ground?

32. What is the mass of an alien that has 550 J of KE and is moving with a speed of 5.3 m/s?

33. What kind of energy is stored in chemical bonds?

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34. What two factors determine how much kinetic energy an object has?

35. What type of NRG do the following display?

- a. Apple? _____
- b. Sleeping bird? _____
- c. Leaf? _____
- d. Person? _____
- e. Gasoline? _____
- f. Toaster? _____
- g. Hair dryer? _____

True/False

36. _____ Kinetic energy is stored energy due to position.
37. _____ GPE means gravitational post energy

Multiple Choice

38. The kinetic energy of a moving object depends on the
- i. A. speed B. mass
 - ii. C. distance D. mass and speed
39. Which two factors determine how much potential energy something has?
- i. A. height and lift B. kinetic energy and mass
 - ii. C. height and mass D. mass and friction