

# ENERGY TRANSFORMATION

Name \_\_\_\_\_

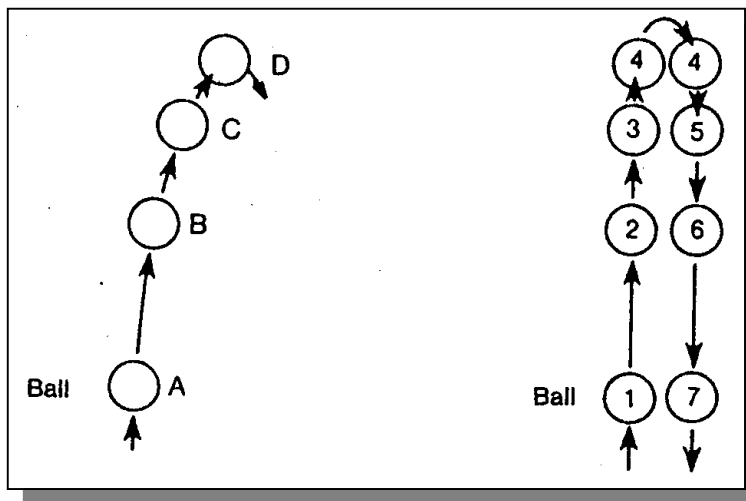
Partners \_\_\_\_\_

Define the following.

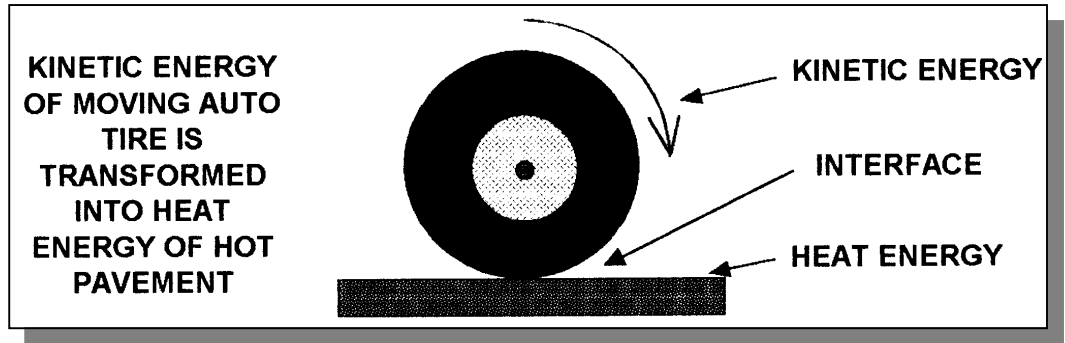
closed energy system -	conservation of energy -
energy source -	kinetic energy -
energy sink -	potential energy -

Directions: give the best answer to the following questions.

- Why is a thermos bottle a good example of a closed energy system? \_\_\_\_\_  
\_\_\_\_\_
- In a closed energy system, the total amount of energy in the system \_\_\_\_\_.
- An object giving off energy is called a \_\_\_\_\_, while an object absorbing energy is called a \_\_\_\_\_.
- In a closed system, the amount of energy given off by the \_\_\_\_\_ must ( < > = ) the amount absorbed by the \_\_\_\_\_.
- The diagram at right depicts two balls after they've been thrown into the air. The ball on the left has maximum potential energy (energy of position) at position \_\_\_\_\_. The ball on the right has maximum kinetic energy (energy of motion) at position \_\_\_\_\_.
- Between positions A and B, energy is transformed from \_\_\_\_\_ to \_\_\_\_\_ energy.



7. A rolling car tire transforms kinetic energy (motion) into heat (infrared). This is called \_\_\_\_\_.



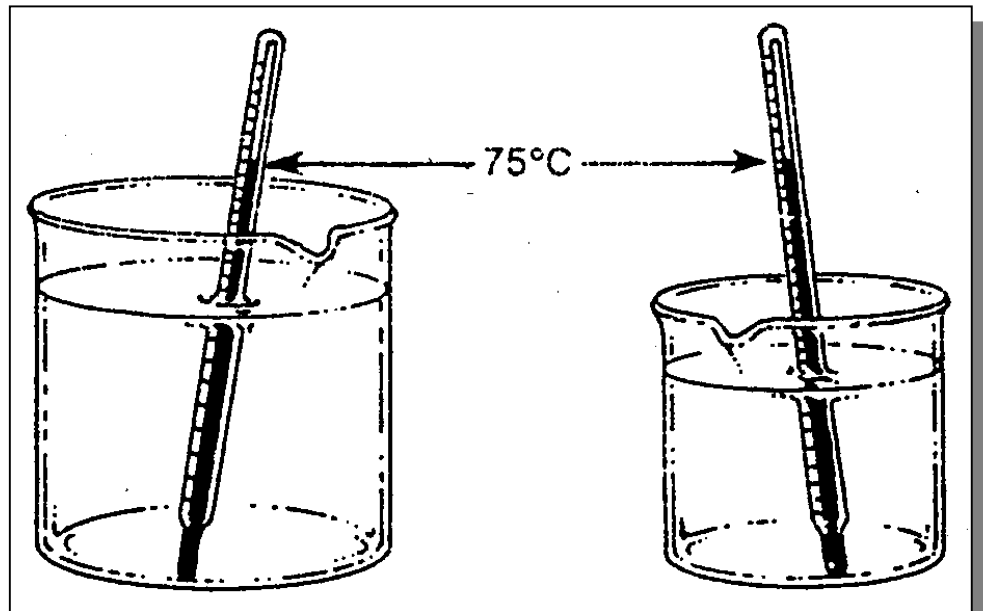
## HEAT & TEMPERATURE

8. Temperature is defined as \_\_\_\_\_.

9. The faster an object's atoms are moving, the \_\_\_\_\_ its temperature.

10. Heat is defined as \_\_\_\_\_.

11. The diagram at right depicts two beakers. Both contain water at 75°C. The beaker on the left has ( more / less / equal ) heat compared to the beaker on the right.



12. According to the ESRT p.13, 90°F equals \_\_\_\_\_°C.

13. Heat always flows from a region of \_\_\_\_\_ to a region of \_\_\_\_\_.

14. If a hot rock lands in a cold lake, energy will be transferred from the \_\_\_\_\_ to the \_\_\_\_\_ until \_\_\_\_\_.

15. If you were to try to raise the temperatures of 10g of iron and 10g of water, you'd discover that you needed to add a lot more heat energy to the water than to the iron. Different materials heat up and cool off at different rates. A calorie is the amount of \_\_\_\_\_ needed to raise the \_\_\_\_\_ of one \_\_\_\_\_ of \_\_\_\_\_ by one \_\_\_\_\_.

16. The specific heat of a substance is the quantity of \_\_\_\_\_ required to raise the \_\_\_\_\_ of one \_\_\_\_\_ of that material one \_\_\_\_\_.

17. The specific heat of water is \_\_\_\_\_.