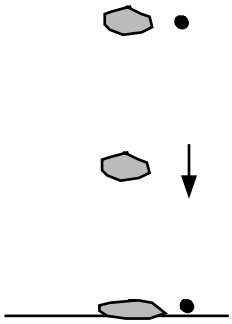
Name _____
Period _____ Date_____

Energy Pie Charts, System Schemas, and Energy Flow

For each situation shown below:

1. Draw a system schema showing your choice of system as well as the objects that interact with it.
2. Draw a series of pie charts *for the indicated instants in time* illustrating the storage of energy by the system you chose.
3. Be clear about which pie goes with which instant of motion. Ambiguity will not be interpreted in your favor.
4. If your pies grow or shrink, add arrows to your system schema showing the transfer of energy.
5. Label *each* pie wedge with *both* where and how the energy is stored.
6. Repeat steps 1 - 5 with a different choice of system. *At least one choice of system must contain more than one object.*

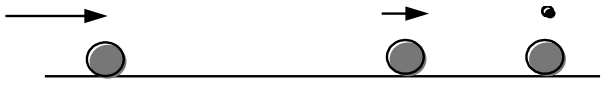
You can save repetition and space by labeling wedges and bars with single letters or colors and including a key to the side. In bluebeam, the circle tool makes it easy to draw perfect circles.



1. A piece of clay is dropped to the floor.

System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*



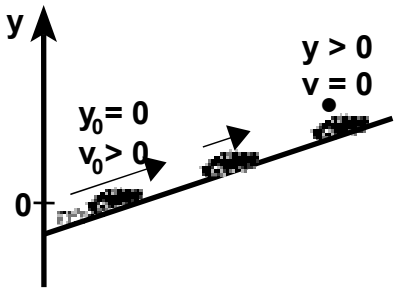
2. A ball rolls to a stop on the floor.

System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*

REMINDERS: ● system schema w/ arrows ● pie charts - wedges labeled both where and how stored ● which pie with which instant?

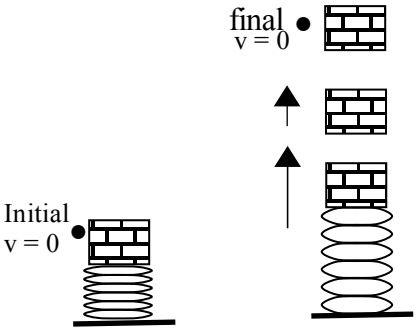
3. A car rolls to a stop while moving up a hill – no friction



System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*

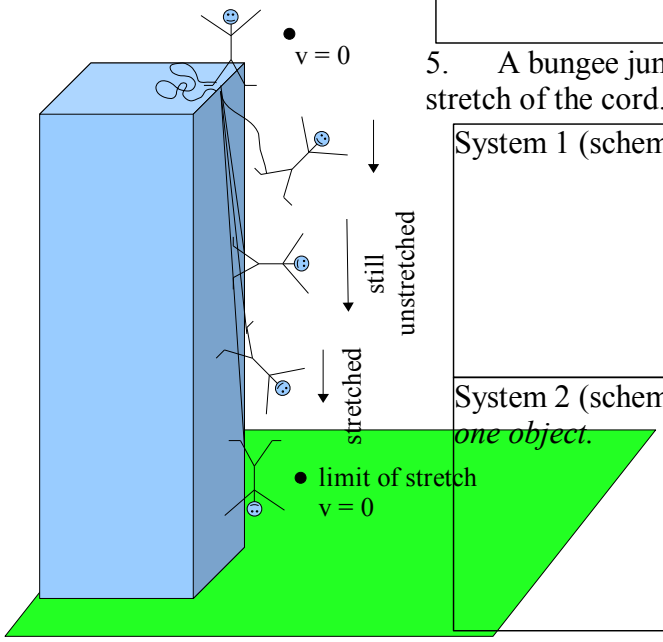
4. A load of bricks rests on a tightly coiled spring, then is launched into the air. No friction.



System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*

5. A bungee jumper falls off the platform and reaches the limit of stretch of the cord. (No friction)

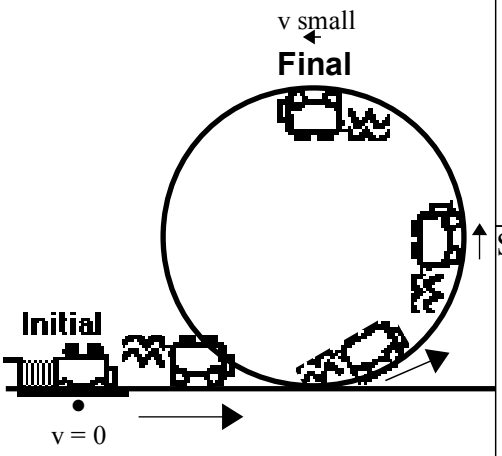


System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*

REMINDERS: ● system schema w/ arrows ● pie charts - wedges labeled both where and how stored ● which pie with which instant?

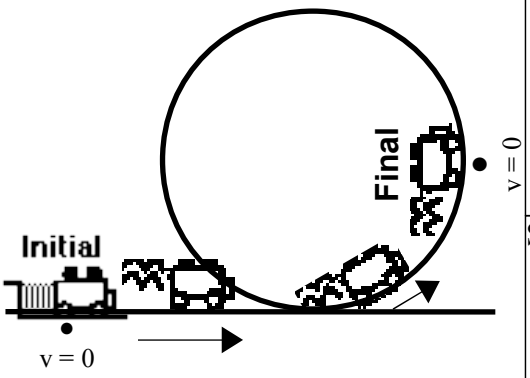
6. (a) A spring sends a cart to the top of the loop-the-loop. (no friction)



System 1 (schema and pie charts)

System 2 (schema and pie charts) *At least one system must contain more than one object.*

6. (b) The cart only makes it part way up.
(The track has friction)



System 1 (schema and pie charts)

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