

The Science Lab

CONCEPT BUILDER: DO HEAVIER OBJECTS FALL FASTER THAN LIGHTER ONES?

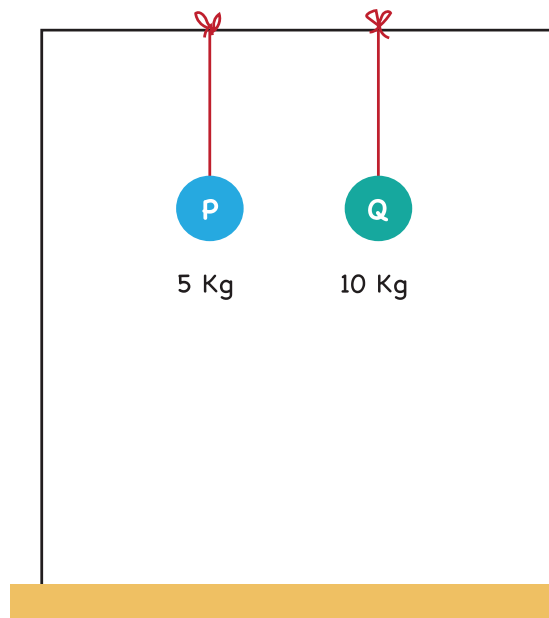
Imagine:

Two balls, P and Q, of equal size but unequal mass (P weighs 5 kg and Q weighs 10 kg) hanging from strings of the same length at a certain height above the ground.

Predict:

The strings are simultaneously cut. Which of them would fall to the ground faster?

- Ball Q because heavier objects always fall to the ground faster.
- Ball P because lighter objects always fall to the ground faster.
- Both would take the same time because the time taken to fall is independent of their mass.
- We cannot say because it would depend on the height from which they are falling.



Explain:

Your reason for choosing the outcome you predicted.

Discuss:

- How would you test if your answer is correct? What everyday objects would you use to replace the balls?
- If the balls were of different sizes, would your answer change? For e.g., if you were to repeat this experiment with a cricket ball and a marble, which would fall to the ground faster? Why?
- If the balls were replaced with objects of different shapes, would your answer change? For e.g., if you were to repeat this experiment with a dictionary (with its pages tied together) and a brick, which would fall to the ground faster? Why?

