# The study: weight is a force caused

The effect of mass and weight on falling hellicopterIntroduction: in this experiment i will proof that object with bigger mass and weight falls faster than the lighter one. I will be using a paper helicopter and paperclips then drop it at a certain height and record the time taken for each trial. I will add the clips for each round. There are some things that are needed to be considered throughout the experiment like the variables involved, procedure, apparatus needed. Research question: will the mass and weight of an object affect the time taken for it to fall? Background study: weight is a force caused by gravity and it’s measured in Newtons.

mass however, is the matter available inside. it is measured in Kilograms or grams. the mass of an object always stays the same. gravity attracts all objects. gravitational force increase on bigger and heavier object. how fast something falls is due to the acceleration of gravity and air resistance.

that is why heavy objects fall first. if you try to drop 2 objects with different mass and weight, for example a piece paper and a rock. the paper will be slowed down by the air.

the rock, the one with bigger mass and weight, will land first. Hypothesis: the heavier the object the faster it will fall. Variables involved: Independant: the number of clipDependant: time taken for the helicopter to fall. Controlled: the size of the helicopter, the type of clip, height. Apparatuses needed: Labcoat- for safetyPaper- to be folded into a paper helicopter Paper clips- to add the mass and weight of Scisors- to make the paper helicopterStopwatch- to record the time taken. Ruler- to meassure

the height. Method: Wear lab coat for safetyProvide a paperCut and fold to make it look like a helicopter Add 1 paper clip.

Measure the height( from where the object will be dropped)Drop the helicopter. Record the time to check how long the object lands. Write it the resultsRepeat it 2 more timesAdd another paperclip. Drop it, record and writeRepeat for 2 more times3 paper clips should be clipped to the helicopter Drop, record, writeFind the averageConcludeResultsnumber of paper cliptrial 1 trial 2trial 3average12: 00 s1: 90 s2: 08 s1. 9921: 60 s1: 67 s1: 64 s1. 6331: 20 s1: 22 s1: 25 s1. 2241: 18 s1: 16 s1: 15 s1. 1651: 10 s1: 13 s1: 14 s1.

12 1: 0. 45g2: 0. 9g3: 1. 8g4: 3. 6g5: 7. 2gProcessing dataConclusionMy hypothesis is correct. I figured that the heavier the object the faster it will fall for gravitational force increase on bigger and heavier object. how fast something falls is due to the acceleration of gravity and air resistance.

that is why heavy objects fall first. Improvements for further work: To improve, be more careful while doing the experiment, record all the data down to make the experiment fair.