

# Impact

About 10,000 tons of space particles fall to Earth every year. Most are very small and burn up high in the atmosphere. But a few particles are very large and can do tremendous damage.

## Activity

The chart below describes how often an impact occurs. Use it to answer the questions below.

Size	Impact Frequency	Effect
1mm - 1cm (sand grain/pebble)	every second (thousands per day)	bright "shooting star", destroyed in the atmosphere
1cm - 50 cm (rock)	every hour (over 10 per day)	fireball, most destroyed in the atmosphere
0.5 - 1 meter (microwave oven)	every day	bolide (brilliant fireball),.. most destroyed in the atmosphere
1 - 10 metres (car or truck)	once per decade	stony or icy boulders destroyed in the atmosphere, iron boulders can crash through a roof or damage a car
10 - 50 metres (house)	every hundred years	local disaster, equivalent to several Hiroshima-sized bombs
50 - 100 metres (football field)	1-2 every 1,000 years	regional disaster, equivalent to the Meteor Crater Or Tunguska event (about 15 megatons of TNT)
100m - 1 km (small village)	once in 50 to 100 thousand years	continent-size disaster, equivalent to thousands of megatons of TNT
1 - 10 km (small city)	once in 50 to 100 million years	mass extinction, threat to all life (millions of megatons of TNT)
over 10 km	less than. once in a billion years	threat to the continued habitability of the present

How many sand grains fall to Earth each year? \_\_\_\_\_

How many oven-size Objects fall each year? \_\_\_\_\_

In a hundred years, how many truck-size objects fall to Earth? \_\_\_\_\_

In a thousand years, how many house-size objects fall to Earth? \_\_\_\_\_

In a thousand years, how many football-field size objects fall to Earth? \_\_\_\_\_

What are the chances that an object large enough to cause a disaster could fall this year? \_\_\_\_\_