

# CLASS SET

**SCALE**

Stanford NGSS Integrated Curriculum

8th Grade Science Unit 2: Traveling Through Space

Task 3: Gravity in the Galaxies  
Elaborate

**Unit Essential Question:** *What forces keep the parts of our solar system together and how can we use this knowledge to plot a telescope route through space?*

## Elaborate

Similar to Explore Model 3, this data shows how the mass of an object affects gravitational pull.

Body	Mass of the Body (kg)	Time it takes the same rock to impact the surface from 100 meters away
Earth	$5.98 * 10^{24}$	4.51 seconds
Mercury	$3.30 * 10^{23}$	7.35 seconds
Venus	$4.87 * 10^{24}$	4.72 seconds
Mars	$6.42 * 10^{23}$	7.33 seconds
Jupiter	$1.90 * 10^{27}$	0.90 seconds
Saturn	$5.69 * 10^{26}$	1.38 seconds
Uranus	$8.68 * 10^{25}$	2.04 seconds
Neptune	$1.02 * 10^{26}$	1.97 seconds
Pluto	$1.29 * 10^{22}$	17.53 seconds
Moon	$7.35 * 10^{22}$	11.10 seconds
Sun	$1.99 * 10^{30}$	0.42 seconds

- 1. Developing Models:** Return to your solar system model. For your group's assigned planet, label it with the mass and the rate it takes a rock to fall 100 meters.