

PASSPORT TO THE SOLAR SYSTEM

GET TO KNOW THE PLANET DISTANCES (6-8)



Here are two ways to get familiar with the distances between the planets. You can walk the steps which is a healthy and fun way to enjoy the outdoors while thinking about space. Next you can calculate your travel time to the planets by foot, bike, car, rocket, or light speed with this NASA activity.

OBJECT	DIAMETER	STEPS
SUN	1,392,000	0
MERCURY	4,980	12
VENUS	12,360	22
EARTH	12,742	30
MARS	6,760	46
JUPITER	142,600	156
SATURN	120,600	286
URANUS	47,000	574
NEPTUNE	44,600	898



CALCULATE THE TRAVEL TIME TO THE PLANETS

The solar system is huge! Using current technology, it takes a long time to get from Earth to another planet. Do the math and figure out just how long! Then, figure out how long it would take if we could travel at the speed of light (~1,079,000,000 km/hr).

First, figure out how far you would have to travel, on average, if you could travel in a straight line to your destination. Write an equation for determining the distance Mercury is from Earth:

Mercury distance from Earth = Earth distance from the Sun - Mercury distance from the Sun

Write an equation for determining the distance Jupiter is from Earth:

Calculate the distances from Earth below:

Planet/Dwarf Planet	Distance from the Sun (km)	Distance from Earth (km)
Mercury	57,900,000	
Venus	108,200,000	
Earth	149,600,000	
Mars	227,900,000	
Jupiter	778,600,000	
Saturn	1,433,500,000	
Uranus	2,872,500,000	
Neptune	4,495,100,000	
Pluto	5,906,400,000	

Planet / Dwarf Planet	Walking (5 km/hr)	Riding Bike (20 km/hr)	Driving Car (120 km/hr)	Riding Rocket (365,000 km/hr)	Traveling at the speed of light
Mercury					
Venus					
Earth					
Mars					
Jupiter					
Saturn					
Uranus					
Neptune					

Next, compute the length of time (in hours) it would take you if you were walking, riding a bike, driving a car, riding on a rocket, or traveling at the speed of light.

Write an equation for determining travel time. $t =$

