

**Part I: Distances**

- 1) Estimate the distance, in meters, between your group and the nearest aisle (one meter is a bit over 3 feet). You don't need a precise measurement, just an estimate.

In this activity, your group represents the Earth and the aisle represents the Sun.

The table below lists the distance from the Sun to a couple planets and the nearest star. The distances are in Astronomical Units (AU).

Planet or Star	Average Distance From Sun
Earth	1.0 AU
Neptune	30 AU
Alpha Centauri (star)	250,000 AU

- 2) How many times further from the sun is Neptune than the Earth? Alpha Centauri than Earth?
- 3) If the distance from your group to the aisle represents the distance from the Earth to the Sun, how far away from where your group is sitting would the planets Neptune and Alpha Centauri be?

**Part II: Travel times**

Another way to think about distances is to imagine how long it would take to travel to another planet or star.

- 4) What is the fastest speed, in miles per hour, that you imagine a plane could travel?
- 5) The robotic spaceship Voyager 1, which was launched in the late 1970s, is the fastest spacecraft ever made. It is currently moving at about 38,000 miles per hour.
- 6) An Astronomical unit is approximately 93 million miles. How many miles from the Sun is the Earth?

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- 7) How many *hours* would it take Voyager 1 to fly from the Earth to the Sun?
  
- 8) How many *days* would the trip to the Sun take? How many *years* (there are 365.25 days in a year)?
  
  
  
  
  
  
  
  
  
  
- 9) How long would it take to travel from the Sun to Neptune? Write your answer in hours, days, or years. Choose the unit of time that seems most appropriate to the length of your trip. How did you figure out your answer?
  
  
  
  
  
  
  
  
  
  
- 10) How long would it take to travel from the Sun to Alpha Centauri? Write your answer in hours, days, or years. Choose the unit of time that seems most appropriate to the length of your trip. How did you figure out your answer?
  
  
  
  
  
  
  
  
  
  
- 11) Now that you know how long it would take to fly from the Sun to the next nearest star, Alpha Centauri, comment on the claim that aliens have flown from other stars to visit the Earth.