A	C

Names: _____

Due Date: _____

❑ 01 ❑ 05
❑ 02 ❑ 06
❑ 03 ❑ 07
❑ 04 ❑ 08

SNC1D **Assignment: Scale model of the Solar System**

Purpose: to create two scale models of the solar system: one in Jarvis, and one going _____
Please do all your calculations on this sheet and hand in by the end of the period.

1. In your group, turn to page 294-295 of your text book. If you are doing the asteroid or Kuiper belts, please see the attached handouts.

2. Complete the following table for your solar system object (see below for an example for the Earth).

Planet/Object	
Orbital Radius (AU)	
Scale distance on map (m)	
Scale distance in hall (m)	
Radius (in scientific notation) (km)	
Scale radius on map (cm/mm)	
Common object reference (eg beach ball, fruit, grain of sand, etc.)	
Mass (relative to Earth)	
Avg. Surface Temp. (°C)	
Day Length (rel. to 1 Earth day)	
Year Length (rel. to 1 Earth year)	
Number of Moons	
Special Features	

The scale on the map is 1 AU = 45 m.

Earth's radius is 6.371×10^3 km
1 AU = 1.496×10^8 km

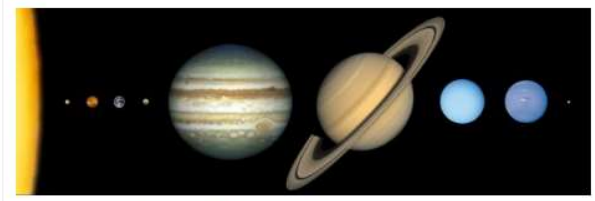
$$\frac{6.371 \times 10^3\, km}{1.496 \times 10^8\, km} = \frac{x}{45m}$$

$$x = \frac{(6.371 \times 10^3\, km)(45m)}{1.496 \times 10^8\, km}$$

$$= 0.002m$$

$$= 0.2mm$$

This is about the size of a medium grain of sand!

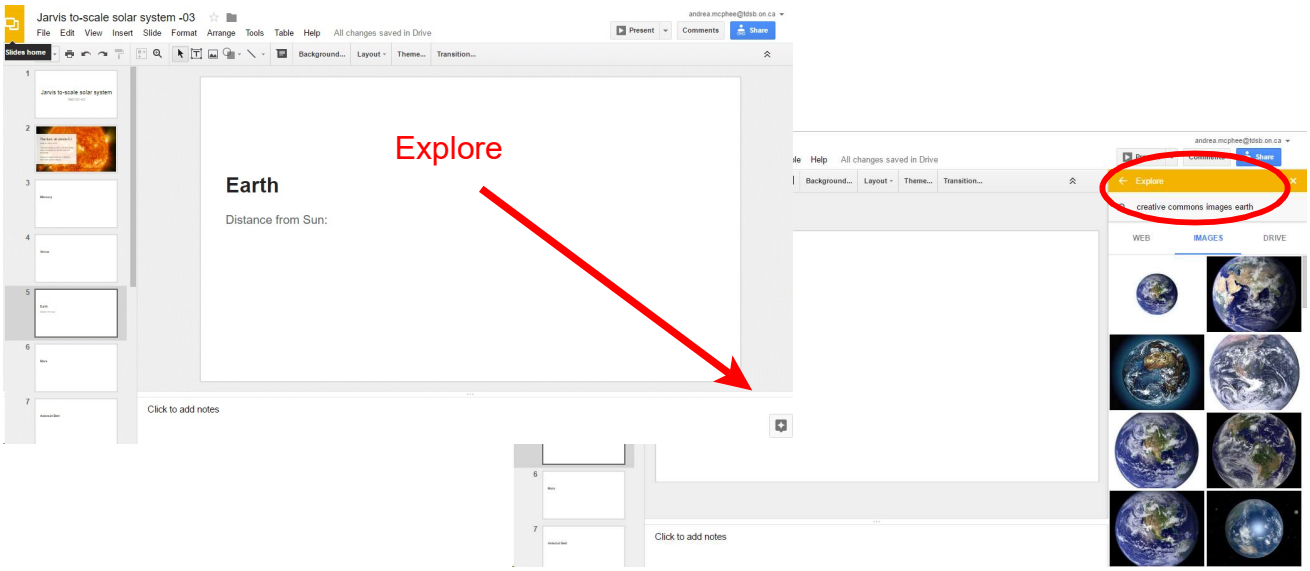


Eight planets and a dwarf planet in our Solar System, approximately to scale. Pluto is a dwarf planet at far right. At far left is the Sun. The planets are, from left, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Credit: Lunar and Planetary Institute

The scale in the hall is 1 AU = 2.5 m

To help you understand the relative sizes of the planets, at the map scale, the Sun would have a radius of 21 cm, which is about the size of a beach ball.

3. Once you have completed your table, either go to the shared Google Slides for your class or create a poster (using scrap paper – it will be scanned in to the Google Slides) and complete the slide for your planet/object using the information you found. You may use the Explore button to search for Creative Commons images of your object. Make sure you cite the image. Be creative! You don`t need to use the same layouts as the Sun or Earth.



4. While you are doing that, go to the map on the front desk and put a mark and label where your planet/object will be. Assume the Sun is at the corner of

_____.

Marking Rubric for Assignment: Scale model of the Solar System

Criteria	Level 4	Level 3	Level 2	Level 1
Application Information is correct; calculations are correct to a ____ degree	outstanding	high	moderate	poor
Communication The poster/slide is informative and attractive to a ____ degree.	outstanding	high	moderate	poor

A	C

Names: _____

Due Date: _____

❑ 01 ❑ 05
❑ 02 ❑ 06
❑ 03 ❑ 07
❑ 04 ❑ 08

SNC1D **Assignment: Scale model of the Solar System**

Purpose: to create two scale models of the solar system: one in Jarvis, and one going _____ . Please do all your calculations on this sheet and hand in by the end of the period.

1. In your group, turn to page 294-295 of your text book. If you are doing the asteroid or Kuiper belts, please see the attached handouts.

2. Complete the following table for your solar system object (see below for an example for the Earth).

Object	
Minimum Orbital Radius (AU)	
Scale distance on map (m)	
Scale distance in hall (m)	
Maximum Orbital Radius (AU)	
Scale distance on map (m)	
Scale distance in hall (m)	
Radius of largest object (in scientific notation) (km)	
Scale radius on map (cm/mm)	
Common object reference (eg beach ball, fruit, grain of sand, etc.)	
Day Length (rel. to 1 Earth day)	
Year Length (rel. to 1 Earth year)	
Special Features	

The scale on the map is 1 AU = 45 m.

Earth's radius is 6.371×10^3 km
1 AU = 1.496×10^8 km

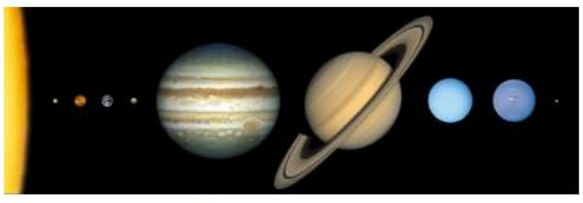
$$\frac{6.371 \times 10^3\, km}{1.496 \times 10^8\, km} = \frac{x}{45m}$$

$$x = \frac{(6.371 \times 10^3\, km)(45m)}{1.496 \times 10^8\, km}$$

$$= 0.002m$$

$$= 0.2mm$$

This is about the size of a medium grain of sand!



Eight planets and a dwarf planet in our Solar System, approximately to scale. Pluto is a dwarf planet at far right. At far left is the Sun. The planets are, from left, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Credit: Lunar and Planetary Institute

The scale in the hall is 1 AU = 2.5 m