

Scale Model Solar System

Activity

Planet Size & Distance

Grade 4-12

Very EASY to Use

3 Different Grade Versions

Metric and Imperial



★★★★★ Extremely satisfied - “This was exactly what I was looking for! Thank you!”

Reading Comment



Extremely satisfied - This was exactly what I was looking for! Thank you!



Extremely satisfied - Students in my multi grade classroom had a great time working through this activity.



Extremely satisfied - My 8th graders loved this!



SCROLL

to take a look inside!



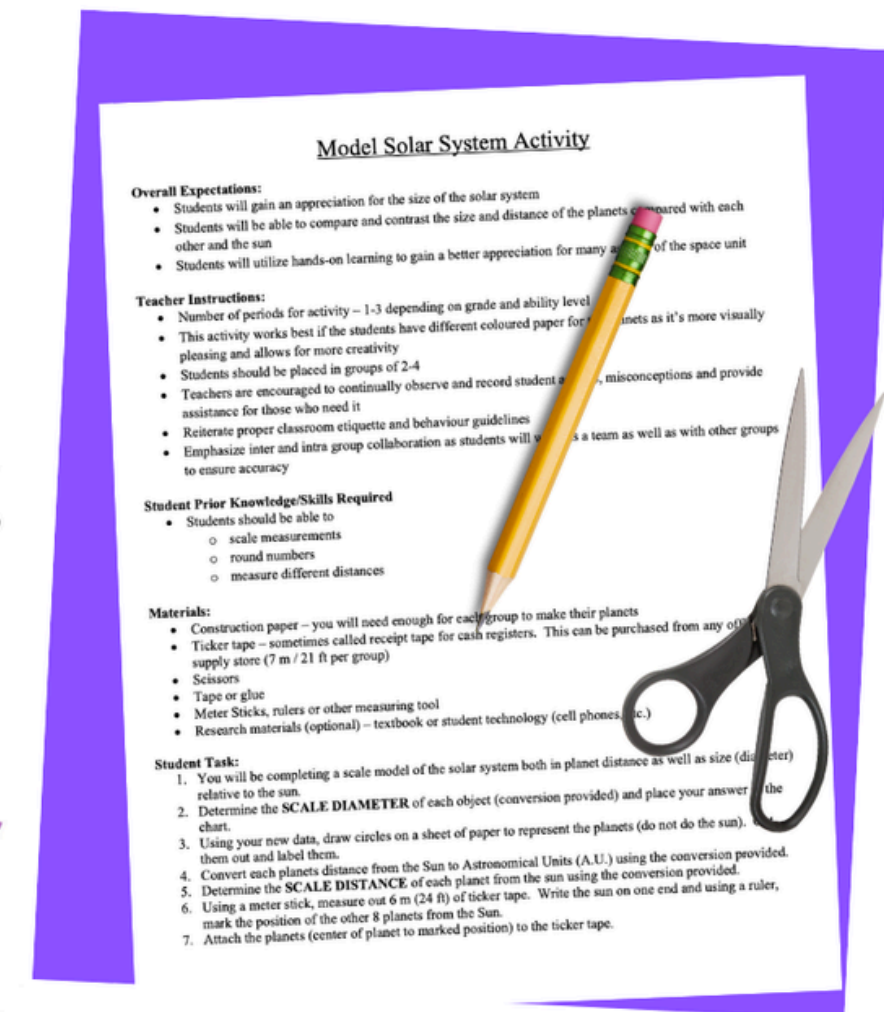
THE PROBLEMS YOU FACE

- It is very hard to get across the sheer size of the solar system.
- It's impossible for students to properly understand how far apart the planets are even within our solar system.
- Students can't properly understand using figures and images alone.

EASY TO PREP

Materials:

- Colored paper
- Scissors,
- Measuring tape/stick



“



Extremely satisfied - Students in my multi grade classroom had a great time working through this activity.

”

What Will Your Students Learn?

Your Activity

- ✓ A multi-day activity your kids will love.
- ✓ Geared to three different learning levels (Grades 4-7, 7-9, 9 and older).
- ✓ Get your students to build a model solar system 25 feet long to scale.
- ✓ Your activity comes in both Word and PDF versions.

“★★★★★ Extremely satisfied - Students loved it!
★★★★★ Extremely satisfied - This was exactly what I was looking for! Thank you!

★★★★★ Extremely satisfied - My Students Had a great time.

★★★★★ Extremely satisfied - My 8th graders loved this!



- The sheer scale and largeness of the solar system
- How small Earth is compared to many planets and how small they are compared with the Sun
- The extreme distances in space as they create a scale to compare the planets/Sun AND a separate scale to show distance in space

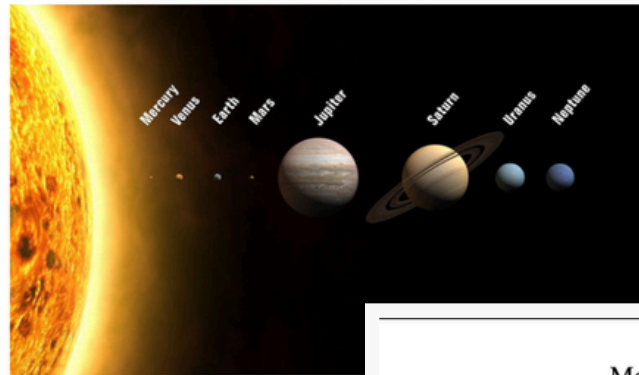
Classroom Fit Guarantee

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Your Activity

Scale Model Solar System Activity



Model Solar System Activity - Table

Object	Actual Diameter (km)	Scale Diameter (cm – rounded to nearest tenth) 1 cm = 10,000 km	Actual distance from Sun (km)	Actual distance from Sun (A.U.) 1 A.U. = 150,000,000 km	Scale distance from Sun (cm) 20 cm = 1 A.U.
Sun	1,392,000	139.2	-----	-----	-----
Mercury	4,880	0.5	57,900,000	0.4	7.7
Venus	12,100	1.2	108,000,000	0.7	14.4
Earth	12,750				

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Sun			-----	-----	-----
Mercury					
Venus					
Earth					
Mars					
Jupiter					
Saturn					
Uranus					
Neptune					

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Sun	1,392,000	$= 1,392,000 / 10,000 = 139.2$	-----	-----
Mercury	4,880	$= 4,880 / 10,000 = 0.49 = 0.5$	57,900,000	$= 57,900,000 / 150,000,000 = 0.386 = 0.40$
Venus	12,100		108,000,000	
Earth	12,750		150,000,000	
Mars	6,790		228,000,000	
Jupiter	142,800		778,000,000	
Saturn	120,700		1,427,000,000	
Uranus	50,700		2,870,000,000	
Neptune	48,600		4,497,000,000	

Model Solar System Activity

Overall Expectations:

- Students will gain an appreciation for the size of the solar system
- Students will be able to compare and contrast the size and distance of the planets compared with each other and the sun
- Students will utilize hands-on learning to gain a better appreciation for many aspects of the space unit

Teacher Instructions:

- Number of periods for activity – 1-3 depending on grade and ability level
- This activity works best if the students have different coloured paper for the planets as it's more visually pleasing and allows for more creativity
- Students should be placed in groups of 2-4
- Teachers are encouraged to continually observe and record student actions, misconceptions and provide assistance for those who need it
- Reiterate proper classroom etiquette and behaviour guidelines
- Emphasize inter and intra group collaboration as students will work as a team as well as with other groups to ensure accuracy

Student Prior Knowledge/Skills Required

- Students should be able to
 - scale measurements
 - round numbers
 - measure different distances

Materials:

- Construction paper – you will need enough for each group to make their planets
- Ticker tape – sometimes called receipt tape for cash registers. This can be purchased from any office supply store (7 m / 21 ft per group)
- Scissors
- Tape or glue
- Meter Sticks, rulers or other measuring tool
- Research materials (optional) – textbook or student technology (cell phones, etc.)

Student Task:

- You will be completing a scale model of the solar system both in planet distance as well as size (diameter) relative to the sun.
- Determine the **SCALE DIAMETER** of each object (conversion provided) and place your answer in the chart.
- Using your new data, draw circles on a sheet of paper to represent the planets (do not do the sun). Cut them out and label them.
- Convert each planet's distance from the Sun to Astronomical Units (A.U.) using the conversion provided.
- Determine the **SCALE DISTANCE** of each planet from the sun using the conversion provided.
- Using a meter stick, measure out 6 m (24 ft) of ticker tape. Write the sun on one end and using a ruler, mark the position of the other 8 planets from the Sun.
- Attach the planets (center of planet to marked position) to the ticker tape.

Differentiated for Different Learning Levels and Systems

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Mercury	4,880	0.5	57,900,000	0.4	7.7
Venus	12,100			0.7	14.4
Earth				1.0	20
Mars				1.5	30.4
Jupiter				5.2	
Saturn				9.5	
Uranus				19.1	
Neptune				30	

No Calculations

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Venus	12,100				
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Mars					

Some Calculations

Full Calculations

Metric and Imperial Versions
★★★★★ Extremely satisfied - I loved this activity. Our class had many compliments on our work.

Includes Metric and United States Customary System Units



Created for different learning levels

Thanks
**for your interest
in this resource!**

I am a real person and if
you have any questions,
suggestions, or concerns,
please reach out.



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TWF

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*Let's
Connect!*

