

## INTRODUCTION

How big are the planets in our Solar System compared to each other? Lets use some Play-Doh to find out!

## MATERIALS

- At least 2kg of Play-Doh
- 30cm ruler
- Laminated planet labels
- String (or something to cut the Play-Doh with)

## ACTIVITY

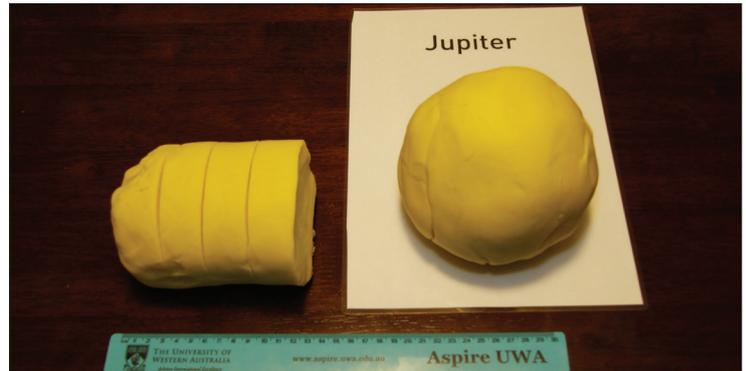
We will split up our big lump of Play-Doh to help us make a scale model of the Solar System. This means that we will be making a mini version of the eight planets, where each one is the right size compared to the others.

## METHOD

1. Lay out all of your planet labels on a table. This is where you'll be placing the balls of Play-Doh to make each of the planets.
2. Take your giant lump of Play-Doh out of its container and roll it into one cylinder that's the same length as your ruler (30cm).



3. Use the ruler and mark out 10 equal portions on your Play-Doh (each one will be 3cm wide.)



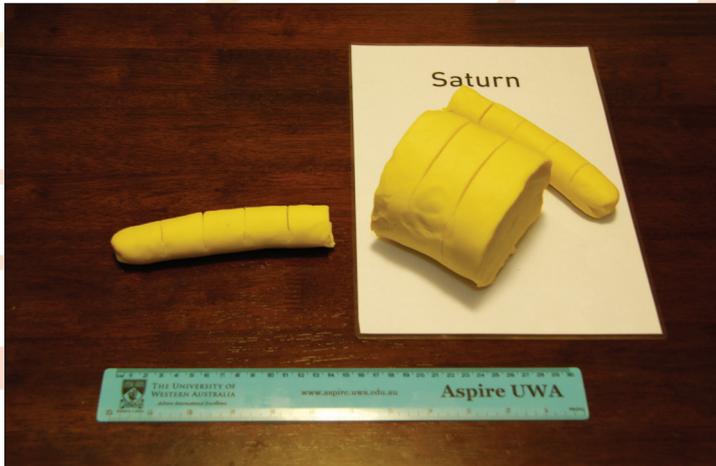
4. Cut 6 of these sections away and roll them all together. This is Jupiter. Put it on the Jupiter spot on your planet sheets.



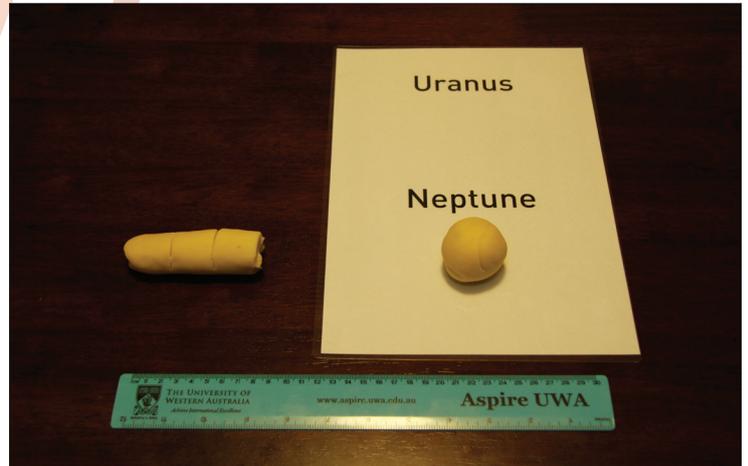
5. Count another three sections and put them on the spot for Saturn. This isn't all of Saturn yet, we'll be adding some more!



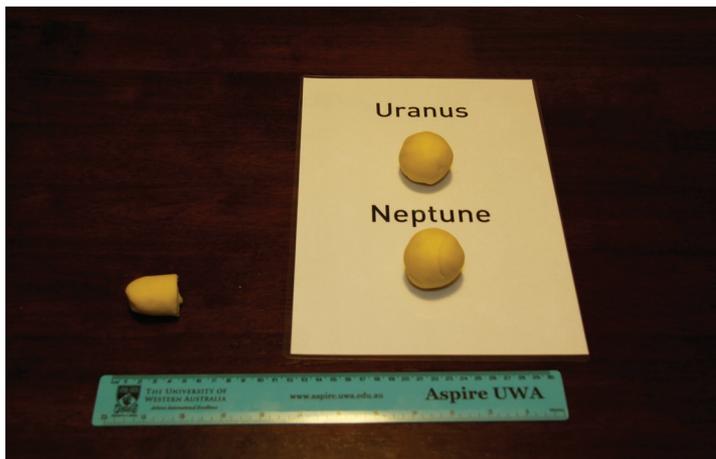
6. Take your remaining Play-doh (one section) and roll it out again to make 30cm. Divide this new tube of Play-Doh into ten sections again.



7. Take five of your sections and put them on top of Saturn. We'll be adding to Saturn one more time!



8. Cut two of your sections and roll them into a ball. This is Neptune, place it on the Neptune spot on your planet sheets.



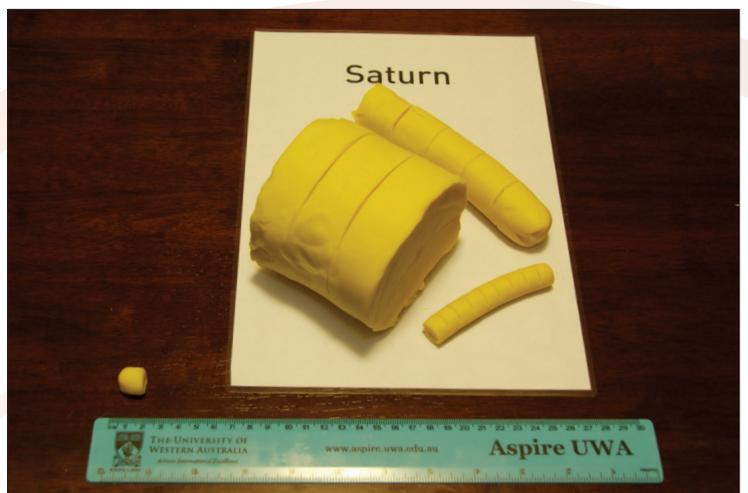
9. Take another two of your sections and roll them into a ball as well. That's Uranus, place it on the Uranus spot on your planet sheets.



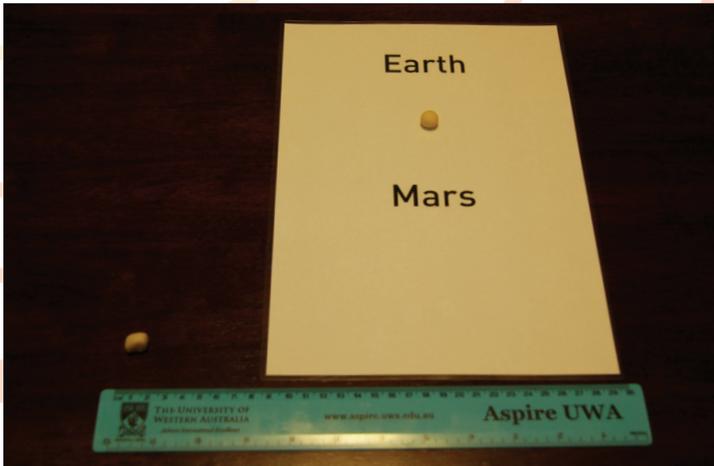
10. You should have one section left, take it and roll it out to 10cm long (use your ruler.)



11. Mark 10 sections along your tube of Play-Doh and cut 9 of them off.



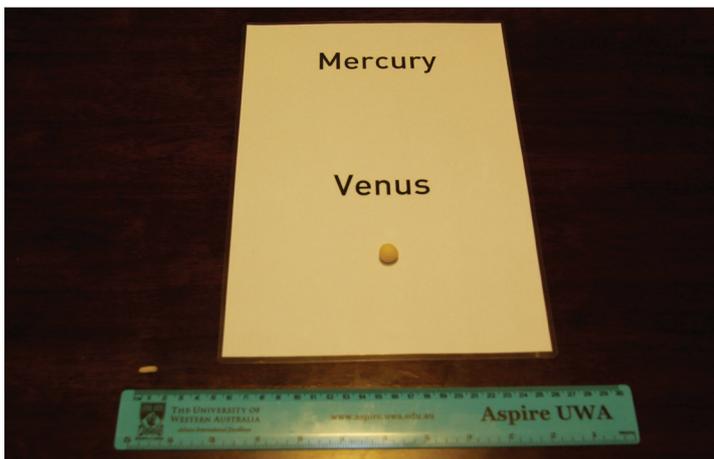
12. Add those 9 sections to Saturn. Saturn is now complete, roll it all together.



13. Take your last section and split it in half. One of those pieces is Earth. Roll it into a ball and place it on Earth's spot on your planet sheets.



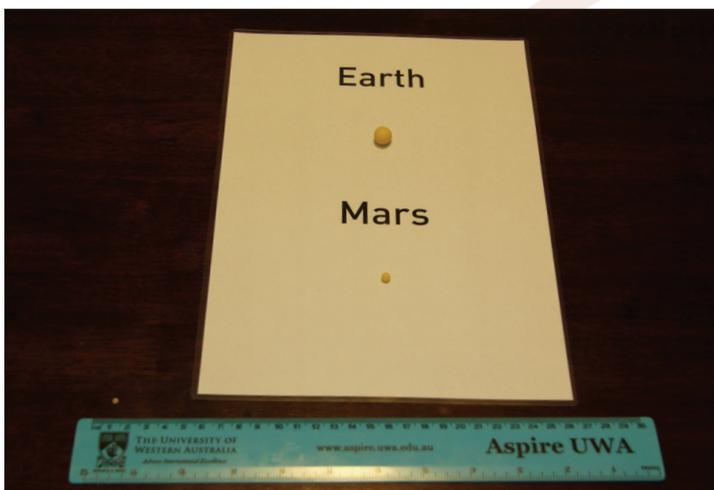
14. The rest of your Play-Doh is getting pretty small now! Roll it out again into a 10cm tube and divide it into 10 sections.



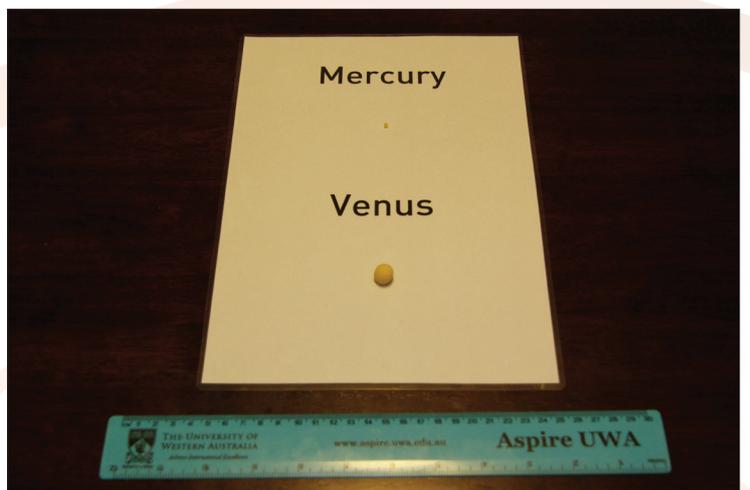
15. Take 9 of those sections - this makes Venus. Roll them into a ball and then put Venus on its piece of paper.



16. Now take your little piece of Play-Doh and roll it out again! Make it 2cm long and then cut 2mm off the end.



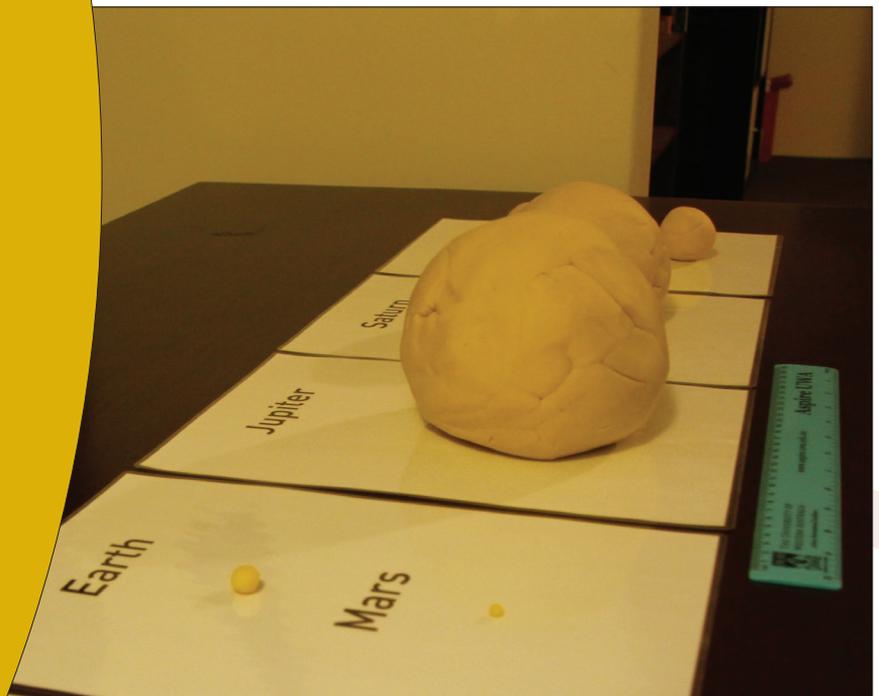
17. The big piece is Mars. Roll Mars into a ball and place it on its planet sheet.



18. The last little piece of Play-Doh is Mercury, place it on its sheet of paper.



19. Now you've built the Solar System! Take a look at how big Jupiter is compared to the Earth and the other small planets.



20. If we had included the Sun in our model we would have needed another 980 tubs of Play-Doh! The big yellow circle to the left is how big the Sun would be if it was in the picture with the Solar System above.

*Adapted from a NASA activity prepared by Jacob Noel-Storr and modified by Rick Varner.  
Original activity can be found at: <http://stereo.gsfc.nasa.gov/classroom/scales.shtml>*