

Sense(s) of Scale



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The MOON... Bigger Than Life

Using the *tactile moon*, you can do several activities with respect to scale and size. We all tend to overestimate the actual size the moon appears in the sky. This activity helps



us get a handle on how small astronomical objects (including the moon) really appear in the sky. In addition, it helps emphasize the fact that when you move further from an object it will “appear” smaller. To sighted individuals, that is intuitive, but to an individual who is blind, the notion of distance and size can be an abstraction.

One way to illustrate this is to post a tactile moon on the wall and have them

explore the moon and its relative size on this scale. Then tell them that as they move away from the moon on the wall, it will APPEAR smaller the further away you get. You can then march about 16 paces from the wall. Now hand them an average marble and have them hold it at arm's length. That is how big the moon APPEARS from that distance now! If you want to know how big our moon really looks in the sky then you need to move an additional 29 paces (45 paces total) or about 33 meters (108 feet)! The moon would be half the size of the marble at arm's length.

So... if you know the distance to the moon on this scale (33 meters) and the diameter of the moon on this scale (0.3 meters or 30 cm – have them measure this!) then you can calculate the distance to the moon if you know it's diameter (3467 km) OR you can calculate the moon's diameter if you know its distance (384,403 km) from the Earth by using a simple proportion.

Materials needed: a tactile moon, an average size marble