

Astronomy by Sight: The earth and the solar system

Equipment	Quantity required for 20 students working:		Unit cost	Supplier and catalog number	Comments	First use
	together as a class	semi-self paced				
Clear plastic ruler (1 ft. length) subdivided into 1/10" and centimeter scales	1/student	1/student		Local stores/supply	Students should supply.	
Clear plastic protractor Semicircular with 0.5 degree divisions	1/student	1/student		Local stores/supply	Students should supply.	
Shadow plotting board: Materials needed: 1. Flat wooden board, 25-30 cm square 2. Small nail, with length approx. 3 cm larger than thickness of wooden board	1 1	1 1		Local hardware store/supply Local hardware store/supply	It is often useful to have made shadow plots for several weeks before students begin this module. (See Instructors Guide for details.) See also AbS, Volume 1.	1.1
Celestial sphere kit: Each kit contains materials for one celestial sphere, including: 1. Two plastic transparent half spheres 2. Dowel rod 3. Earth bead 4. Drinking straw 5. Styrofoam base 6. Marker pen	20	20	\$60.00/pk 10 (bulk)	Learning Technologies (Project STAR) PS-02	Each celestial sphere kit also contains a star chart and a pin to represent the sun, which are not used in <i>Astronomy by Sight</i> .	1.2
Masking tape	1 roll	1 roll		Local stores/supply		1.2
Construction paper	40 sheets	40 sheets		Local stores/supply	Used to make azimuth collars for celestial spheres. Two sheets, 9 1/2" x 11" are required for each collar. Have a variety of colors and extra sheets on hand.	1.2
Colored adhesive dots				Local stores/supply		1.3
Earth globes: Use one of the following: (A) 23 cm diameter, without meridian (B) 30 cm diameter, with half-meridian and tilted axis	10 10	5 5	\$18.95 \$35.95	Frey 155344324 Frey 15360984	See also AbS, Volume 1. This type of globe is preferred.	2.7

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Representation of sun in physical model: Materials needed:					See also POM and AbS, Volume 1.	
1. Light bulb, socket, and cord (household variety)	1	1		Local stores/supply	Bulb should be placed at the center of the classroom and at eye level to represent the sun.	3.1
2. Ring stand, base approx. 6" x 9", rod approx. 0.5" x 24" or 0.5" x 36"	8	8	\$10.95 (24" rod) or \$14.50 (36" rod)	Frey 15574176 (24" rod) Frey 1554179 (36" rod)	Use one ring stand and buret clamp to support the light bulb on a tabletop. Any alternative means of support is fine.	
5. Buret clamp (single), (A) with plain jaws, or (B) with plastic-coated jaws	10 10	5 5	\$6.95 \$6.95	Frey 15574110 Frey 15574266		
Flashlight, plastic, requires 2 D cells	10	5		Local stores/supply	See also L&C.	4.2
Batteries, D-cell NiCad rechargeable, 1.25 V, 1.600 A•h	20	10	\$6.49/pk 2	Radio Shack 23-123 or local stores	See also EC, L&C and Kin. Standard cells may be used.	4.2
Index cards	50 to 100	50 to 100		Local stores/supply		4.2
Thumbtacks	10	5		Local stores/supply		4.8
Double-sided tape	1 roll	1 roll		Local stores/supply	Optional: Loops of single-sided tape work fine too.	OPT 4.8
Small balls, 8-10 cm diameter	60	30		Local toy or hobby store	Small balls, used to represent various celestial objects. See also AbS, Volume 1.	5.3