

PURCHASING INFORMATION

Where to obtain supplies that are hard-to-find, or items that need to be special ordered

Cosmic

Please note that our inclusion of the following retailers does not constitute an endorsement. Retailers are provided for reference purposes only. Note that prices may have changed (these prices represent those provided early 2004).

Lesson/Activity 2.1 - gel filters

Suppliers	Details	Comments
<p>Learning Technologies, Inc. 40 Cameron Avenue Somerville, MA 02144 800-537-8703.</p> <p>www.starlab.com</p>	<p>Product page: http://www.starlab.com/psprod.html</p> <p>Item: PS-08C</p>	<p>4 color filters \$7.50 Note: This includes the Holographic Diffraction Grating, called for in this activity and in Activity 6.1.</p>
<p>GAM Products, Inc. 4875 W. Pico Blvd. Los Angeles, CA 90019 323-935-4975 Fax: 323-935-2002</p> <p>www.gamonline.com</p> <p>Note: a list of GAM dealers can be accessed from the homepage.</p>	<p>This site uses frames. On the homepage, select "Gam Products" from the left hand menu. This brings up a product list, under "GAMColor" select "GAMColor by Number."</p> <p>GAMColor filters: Medium Red XT #250, Primary Blue #850, and Grass Green #650.</p>	<p>Sold by the 20"x 24" sheets for \$6.25 each</p>
<p>Lighttrader 13882 A Better Way, Ste. 7A Garden Grove, CA 92843 714-638-4848 Fax: 714-638-4114</p> <p>www.lighttrader.com</p>	<p>Product page: http://www.lighttrader.com/expendables.htm (Select "Gel Filters" from this page)</p> <p>Roscolux color filters: Medium Red #27, Primary Blue #80 (or Night Blue #74), and Kelly Green #94 (or Dark Yellow Green #90).</p>	<p>Sold by the 20"x 24" sheets for \$5.25 each</p>

Lesson/Activity 2.1 - holographic diffraction grating (Note that Activity 6.1, also calls for a diffraction grating.)

Suppliers	Details	Comments
<p>Learning Technologies, Inc. 40 Cameron Avenue Somerville, MA 02144 800-537-8703</p> <p>www.starlab.com</p>	<p>Product page: http://www.starlab.com/psprod.html</p> <p>Item: PS-08C</p>	<p>5 x 5 inch sheet \$7.50 Note: This includes the colored gel filters, also called for in this activity.</p>
<p>Edmund Industrial Optics 101 East Gloucester Pike Barrington, NJ 08007-1380 800-363-1992 Fax: (856) 573-6295</p> <p>www.edmundoptics.com</p>	<p>Product page: http://www.edmundoptics.com/IOD/DisplayProduct.cfm?productid=1490</p> <p>Stock numbers: NT54-509 and NT40-267</p>	<p>Set of 2 sheets, 6"x12", for \$9.60</p>
<p>Edmund Scientifics' 800-728-6999</p> <p>scientificsonline.com</p>	<p>Product page: http://scientificsonline.com/product.asp?pn=3054509</p> <p>Item number: 3054509</p>	<p>Sheets: 12" x 6" (Set of 2) for \$7.95</p>

Lesson/Activity 2.1 – prism

Suppliers	Details	Comments
Edmund Industrial Optics 101 East Gloucester Pike Barrington, NJ 08007-1380 800-363-1992 Fax: 856-573-6295 www.edmundoptics.com	Product page: http://www.edmundoptics.com/IOD/DisplayProduct.cfm?productid=2049 item number: NT45-252	NT45-252 is an Equilateral prism (three equal 60° angles), face size 10 mm, length 10 mm, for \$55.90
Edmund Scientifics' 800-728-6999 scientificsonline.com	Product page: http://scientificsonline.com/product.asp?pn=3038400 item number: 3038400	3038400, glass prism with base, face size 25 cm, 55 cm long, \$8.95
Sargent-Welch P.O. Box 5229 Buffalo Grove, IL 60089-5229 800-727-4368 Fax: 800-676-2540 sargentwelch.com	Product page: http://sargentwelch.com/product.asp?pn=CP85669%2D10%5FEA item number: CP85669-10	This product page has assorted sizes of glass or acrylic prisms ranging in price from \$6.70 to \$20.70
Carolina Biological Supply Co. 2700 York Road Burlington, NC 27215-3398 800-334-5551 Fax: 800-222-7112 www.carolina.com	Search the Carolina catalog: https://www3.carolina.com/onlinenecatalog/ Catalog # WW-75-4933	75 mm x 25 mm prism for \$5.00 each

Lesson/Activity 2.2 - dry ice

Information is provided in Activity 2.2 on how and where to get dry ice. Further information is provided here:

Dry ice can be obtained from stores listed in the Yellow Pages of the phone book under "Ice."

Grocery stores, ice cream stores, dairies, and fishing supply stores (bait shops) often carry dry ice. People at these stores can also order dry ice for teachers if given advance notice.

Airport food service agencies sometimes use dry ice to keep their product cool. Hospitals use dry ice for the storage and transportation of organs. These agencies may be willing to share dry ice with schools, or direct teachers to suppliers of dry ice.

Lesson/Activity 2.3 - desktop planetarium software

Suppliers	Details	Comments
SPACE.com Canada, Inc. 284 Richmond Street East Toronto Ontario, CANADA, M5A 1P4 800-252-5417 Fax: 416-410-0359 www.starrynight.com	Product page: http://orders.starrynight.com/shop/shop.php?category= Item name: Starry Night EDU 1.0 PLUS	Starry Night EDU 1.0 PLUS includes software, teacher information, and supplemental materials for classroom (K-8) use. \$29.95 Other Starry Night desktop planetarium products are also useful for this activity.
Southern Stars Systems 537 Balra Drive El Cerrito, CA 94530 Phone: (866) 887-7827 Fax: (240) 371-8010 www.southernstars.com	Product page: http://www.southernstars.com/order/index.html (this is a list of resellers and their contact info, you can also order direct from Southern Stars, see their “On-line Store,” linked from this page) Item name: Sky Chart III	Sky Chart III is about \$50.00
The Your Sky website allows the user to create sky views and horizon views. Also provides a virtual telescope. Your Sky: http://www.fourmilab.ch/yoursky/		
For more ideas see Bill Arnett’s exhaustive list of various planetarium and sky simulation programs: http://www.seds.org/billa/astrosoftware.html		

Lesson/Activity 4.1 - sound generator/buzzer

Suppliers	Details	Comments
<p>Sargent-Welch P.O. Box 5229; Buffalo Grove, IL 60089-5229 Phone: 800-727-4368 Fax: 800-676-2540 sargentwelch.com</p>	<p>Product page: http://sargentwelch.com/product.asp?pn=CP71942%2D24%5FEA Item number: CP71942-24</p>	<p>Includes:</p> <ul style="list-style-type: none"> • 3 tuning forks with resonant frequencies of: 256, 512 and 1024Hz • A rubber hammer • 30m of cord • Complete instructions <p>\$46.39</p>
	<p>Product page: http://sargentwelch.com/product.asp?pn=CP32492%2D00%5FEA Item number: CP32492-00</p>	<p>Consists of an electronic sound generator attached at one end of a one-meter aluminum rod to produce sound at a fixed frequency of 2 kHz in three different modes, powered by an included 9-volt battery. \$372.00</p>
<p>Radio Shack www.radioshack.com</p>	<p>Product Page: http://www.radioshack.com/catalog.asp?catalog%5Fname=CTLG&category%5Fname=CTLG%5F011%5F002%5F003%5F000&Page=1 Catalog #: 273-074 Catalog #: 273-055, Model: 273-55</p>	<p>273-074 is a 70dB PC Piezo buzzer @ \$2.99 273-055 is a Mini 12VDC Electric Buzzer @ \$2.99 Follow the directions in the preparation section of 4.1 for assembling the Doppler buzzer (whistle).</p>

Lesson/Activity 6.1 - holographic diffraction gratings (Note that Activity 2.1, also calls for a diffraction grating.)

Suppliers	Details	Comments
<p>Learning Technologies, Inc. 40 Cameron Avenue, Somerville, MA, 02144 , (800)537-8703.</p> <p>www.starlab.com</p>	<p>Product page: http://www.starlab.com/psprod.html#Anchor-Holographic-35882</p> <p>Item numbers:PS-08B and PS-09: 10</p>	<p>See the preparation section of the activity for detailed instructions for making your own holographic diffraction gratings.</p> <p>PS-08B is a 6-foot x 5-inch roll (13 5" x 5" squares) for \$38.00. PS-09 consists of 10 slides, each in a 35mm glass slide mount for \$35.00.</p>
<p>Edmund Industrial Optics 101 East Gloucester Pike, Barrington, NJ 08007-1380 Phone: (800)363-1992, Fax: (856) 573-6295</p> <p>www.edmundoptics.com</p>	<p>Product page: http://www.edmundoptics.com/IOD/DisplayProduct.cfm?productid=1490</p> <p>Stock numbers: NT54-511 and NT54-511</p>	<p>GRATING CARD 2" SQ. 25/PK for \$25.20</p>
<p>Edmund Scientifics' 800-728-6999</p> <p>scientificsonline.com</p>	<p>Product page: http://scientificsonline.com/product.asp?pn=3054509</p> <p>Item number: 3054510</p>	<p>2" x 2" Card Mounted Slides, Package of 15 for \$9.95</p>
<p>Carolina Biological Supply Company 2700 York Road Burlington, NC 27215-3398 US Customers Call: 800-334-5551 Fax: 800-222-7112</p> <p>www.carolina.com</p>	<p>Search the Carolina catalog: https://www3.carolina.com/onlinenecatalog/</p> <p>Catalog # WW-61-2547</p>	<p>WW-61-2547 is 2 sheets of 5" x 5" holographic diffraction grating for \$10.50 per pack</p>

Lesson/Activity 6.1 - emission tubes and power supply

Suppliers	Details	Comments
<p>Edmund Scientifics' 800-728-6999</p> <p>scientificsonline.com</p>	<p>Product page: http://scientificsonline.com/product.asp?pn=3060914</p> <p>Item numbers: hydrogen # 3060906 helium # 3060907 neon # 3060910 power supply # 3071559</p>	<p>Emission tubes are \$29.95 each</p> <p>Power supply is \$179.95</p>
<p>Carolina Biological Supply Co. 2700 York Road Burlington, NC 27215-3398 800-334-5551 Fax: 800-222-7112</p> <p>www.carolina.com</p>	<p>Search the Carolina catalog: https://www3.carolina.com/onlinenecatalog/</p> <p>Catalog numbers: hydrogen # WW-75-5368 helium # WW-75-5366 neon # WW-75-5374 Power supply: WW-75-5400</p>	<p>These emission tubes range in price from \$27.60 to \$27.80 each</p> <p>Power supply is \$167.00</p>
<p>Sargent-Welch P.O. Box 5229; Buffalo Grove, IL 60089-5229 800-727-4368 Fax: 800-676-2540</p> <p>sargentwelch.com</p>	<p>Product page: http://sargentwelch.com/product.asp?pn=WLS%2D68755%2D30W%5FEA</p> <p>Item numbers: hydrogen # WLS-68755-30G helium # WLS-68755-30F neon # WLS-68755-30L power supply # WL2393D</p>	<p>These emission tubes range in price from \$34 to \$36 each</p> <p>Power supply is \$235.00</p>

Lesson/Activity 6.1EXT - flame test chemicals

Suppliers	Details	Comments
<p>Sargent-Welch P.O. Box 5229 Buffalo Grove, IL 60089-5229 800-727-4368 Fax: 800-676-2540</p> <p>sargentwelch.com</p>	<p>Product page: http://sargentwelch.com/product.asp?pn=WL3734B%5FEA</p> <p>Item number: WL3734B</p>	<p>Individual flame test kit: includes more chemicals than are called for, as well as a spectroscopy kit: \$7.35</p>
	<p>http://sargentwelch.com/product.asp?pn=WL3734D%5FEA</p> <p>Item number: WL3734D</p>	<p>Class set of flame test kits: includes 12 spectroscopes and bottles of many of the chemicals called for: \$64.55</p>
<p>Fisher Science Educational Customer Service 485 South Frontage Road Burr Ridge, IL 60521 Phone: 1-800-955-1177 Phone: 1-630-655-4410 Fax: 1-630-655-4335</p> <p>https://www1.fishersci.com</p>	<p>Product page: https://www1.fishersci.com/Coupon?gid=2371604&cid=1341</p> <p>Item number: S67399 (Vendor No.:AZ-20-1695)</p>	<p>The flame test refill provides some of the chemicals needed to do this extension, \$14.95</p>
<p>Carolina Biological Supply Co. 2700 York Road Burlington, NC 27215-3398 800-334-5551 Fax: 800-222-7112</p> <p>www.carolina.com</p>	<p>Search the Carolina catalog: https://www3.carolina.com/onlinenecatalog/</p> <p>Catalog # WW-84-0936</p>	<p>Flame test kit, has many of the chemicals called for. one \$36.95 kit is sufficient for 30 students working in pairs.</p>