

Summer Science Activity: Stargazing

Celebrate the International Year of Astronomy (2009) with this simple summer activity.

Night Watch

School's out, summer's here, but there's still important work to be done. Here is your assignment:

1. Stay up late.
 2. Grab a snack, a blanket, and a flashlight.
 3. Invite a friend, family member or pet.
 4. Head outdoors (just be sure to get your parent's or guardian's permission first).
 5. Sit in your backyard, on your doorstep, somewhere safe where you can get a good glimpse of the night sky. The darker the place, the better the viewing.
 6. Now look... observe... wonder...
 7. Make a wish upon a star while you're at it.
 8. Try to locate *Polaris* (also called the *North Star*) and the *Big Dipper*. See if you can spot *Venus* and *Jupiter*, the two brightest planets in the summer sky.
 9. See if you can detect the following constellations easily seen in summer: *Cygnus the Swan*, *Lyra the Harp*, *Aquila the Eagle*, *Sagittarius the Archer*, and *Scorpius the Scorpion*.
 10. Look, observe, wonder some more. That's it. That's science. Do this 'til you're tired, then go inside and go to bed.
 11. Before your next appointment with the night sky, make your own star finder or star wheel (see instructions below), and see how many objects you can identify. (Be sure to bring your flashlight so you can see your star finder or wheel in the dark!)
 12. The countryside is ideal for viewing, as it's far away from city lights. Ask a parent if they fancy a trip to a state park or other safe place that's far away from streetlights. Watch the weather reports and plan for a night that's clear from cloud cover. Better yet, check a moon chart as well and pick a clear night with minimal moonshine.
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Make a Star Finder

Download and print the template from the website below, fold it origami-style according to the directions, and make your own star finder in a snap.

NASA Space Place:

<http://spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml>

Materials:

- Computer printer paper
- Scotch™ Precision Scissors or Scotch™ Kids Scissors



Make a Star Wheel

Star wheels help you locate and identify constellations of stars and other objects in the night sky. You can adjust them for any time of night, in any month of the year!

These web pages have downloadable masters for printing and photocopying, plus assembly instructions.

Uncle Al's Star Wheels

Lawrence Hall of Science / University of California, Berkeley

<http://www.handsonuniverse.org/activities/uncleal/>

Kepler's Star Wheel

<http://kepler.nasa.gov/ed/starwheel/>

For an extra challenge—the Kepler wheel has an extra coordinate grid for plotting additional exo-planet stars. You can download both the basic Uncle Al's and the Kepler wheels from this link.

Materials:

- Computer printer paper (preferably heavy weight or card stock)
- Thin cardboard (like a file folder or cereal box)
- Scotch™ Precision Scissors or Scotch™ Kids Scissors
- Scotch® Glue Stick or Scotch® Double-Sided Tape
- Scotch® Magic™ Tape
- Stapler

Links:

About Stars

<http://www.discoverychannel.co.uk/space/observing/invisible/index.shtml>

Using Star Maps

<http://kepler.nasa.gov/ed/starwheel/UsingStarMapsACC.pdf>

Ask an Astronomer

Frequently asked questions about stargazing, moon watching, planet watching, meteor showers, shooting stars, comets, constellations, galaxies, and more.

<http://curious.astro.cornell.edu/stargazing.php>

Hubblesite: Tonight's Sky

Your guide to constellations, deep sky objects, planets and events

http://hubblesite.org/explore_astronomy/tonights_sky/



Printable Zodiac Constellation Maps

<http://www.spacejr.com/tag/zodiac-constellation-maps/>

Weather Underground

Enter the ZIP code where you'll be star gazing and see a map of the night sky.

<http://www.wunderground.com/sky/index.asp>

SkyMaps.com

This site features the Evening Sky Map -- a 2-page monthly guide to the night skies of the northern and southern hemispheres.

<http://skymaps.com/>

Google Sky

<http://www.google.com/sky/>

Article about light pollution: "A Silent Cry for Dark Skies" from The Universe in the Classroom

<http://www.astrosociety.org/education/publications/tnl/74/74.html>

For more resources, visit www.discoveryeducation.com/sciencefaircentral.

