



Scouters Winter Campout 2009

Star Search: Astronomy and Space Resources

NASA's Human Space Flight Home Page (http://spaceflight1.nasa.gov/home/index.html)	News and Information on Human Space Flight, including guides to sighting the International Space Station and the Space Shuttle
Google Sky (http://www.google.com/sky/)	Google Maps for the Night Sky (no public transportation routing, yet)
Wikipedia - Astronomical Objects (http://en.wikipedia.org/wiki/Category:Astronomical_objects)	Table of contents to Wikipedia's extensive astronomy reference pages
Interactive Skychart (http://skychart.skytonight.com/observing/skychart/skychart.asp)	Sky and Telescope's Java Skychart application - may take a bit of setting up, but you can get a map for the sky over your weekend campsite in just a few minutes
Atlanta Astronomy Club (http://www.atlantaastronomy.org/index.php)	Home of the Atlanta Astronomy Club, with links to numerous local astronomy resources and a calendar of astronomy events. Check out the Charlie Elliott chapter at the Charlie Elliott Wildlife Center near Bert Adams.
Chris Dolan's Constellations Pages (http://www.astro.wisc.edu/~dolan/constellations/constellations.html)	A University of Wisconsin grad student maintains detailed information and sky charts for 88 constellations and asterisms
Cosmobrain Astronomy's IAU Constellation Page (http://www.cosmobrain.com/cosmobrain/res/constellations.html)	Another list of the 88 Constellations as defined by the International Astronomical Union (IAU)
Webstars (http://heasarc.gsfc.nasa.gov/docs/www_info/webstars.html)	A service of the Goddard Space Flight Center with lots of good Astronomy links.

Star Search – Find your way

Equipment Needed:

Pavilion (or covered area)

2 Rolls of Duct Tape (to mark starting line and patrol spaces)

10 Pencils

10 clip boards

20 18x12x10 boxes (See Box Construction for instructions)

10 Astronomy pamphlets w/ ring to hang on rope across the start line

110 score sheets

4 stop watches

50 additional astronomy pamphlets to be put in final take home envelope

60 foot rope

Star Search – Find your way

Box Construction:

Materials:

1 empty cardboard box; one that holds 8 ½ x 11 inch photocopy paper works perfect
¼ inch foam board
Aluminum foil
1 Battery operated light
Hot glue
4 Foam blocks – approximately 1 inch x 1 inch x 4 or 5 inches
Nail or other tool to punch holes in the foam board
Star patterns
Black spray paint

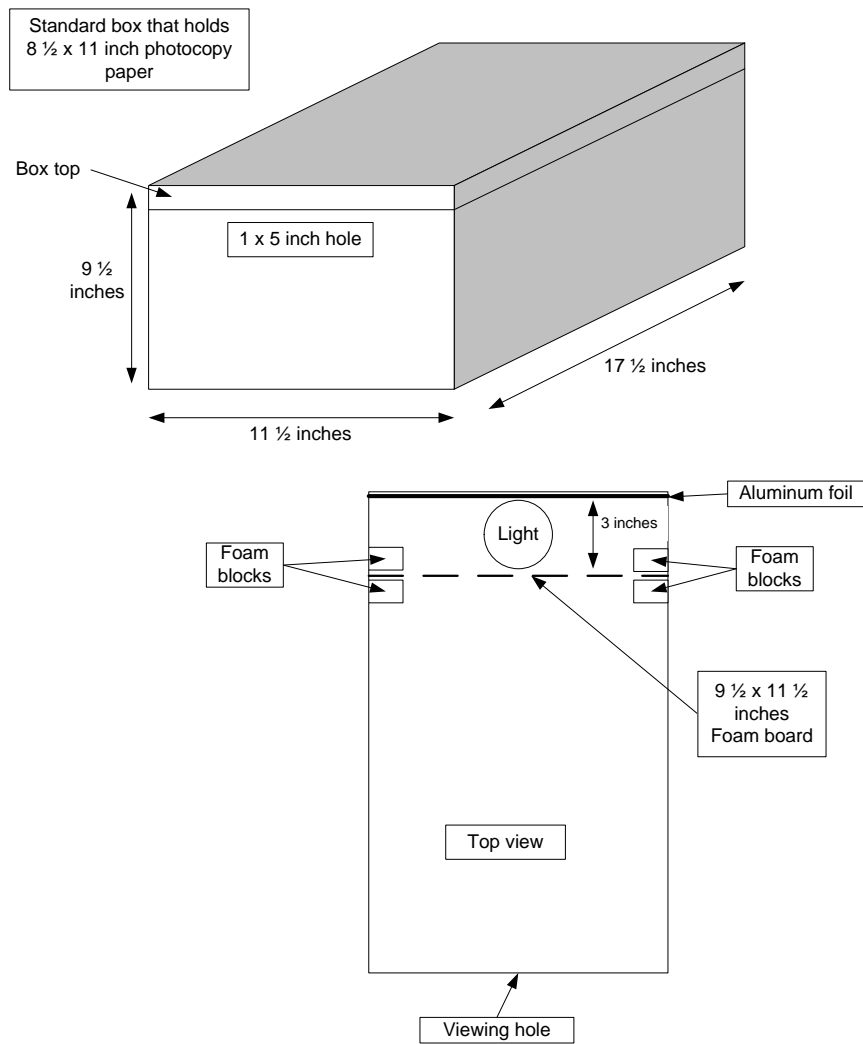
Instructions:

See the accompanying illustration to help with box construction.

1. Make sure the box top is in place and spray paint the outside of the box. Painting the bottom is optional.
2. When the paint is dry, make sure the box top is in place then mark and cut out a rectangle viewing hole on one end. The size should be around 1 inch tall and 5 inches wide. The top of the hole should align with the bottom of the box top.
3. Line the inside “back wall” of the box with aluminum foil – the side that is opposite from the viewing hole. Be sure the shiny side is showing. Hot glue or tape the foil so it will not shift.
4. Hot glue or sticky tape the light to the bottom of the box next to the foil. Try to center the light so the light is reflected evenly.
5. Cut the foam board to fit the box – it should be parallel to the back wall of the box. When the box top is in place, minimal light should show around the edges.
6. Hot glue foam blocks on both sides of the box to keep the foam board in place. Try to leave a little “wiggle” room so you can slide the foam board into and out of the space.
7. Remove the foam board from the box and mark the desired star pattern on one side. Punch holes in the foam board that represent the stars. Slide the foam board back into the box.
8. Place a paper copy of the star pattern in the box (lid or front wall) so you do not forget which star pattern is being used.
9. If several boxes are being made, put a number on the outside of each box (near the viewing hole) so you can keep up with which box contains the different star patterns. Make a list of the box number and star patterns.
10. Have fun playing the game.

Star Search – Find your way

Box Illustration:



Star Search – Find your way

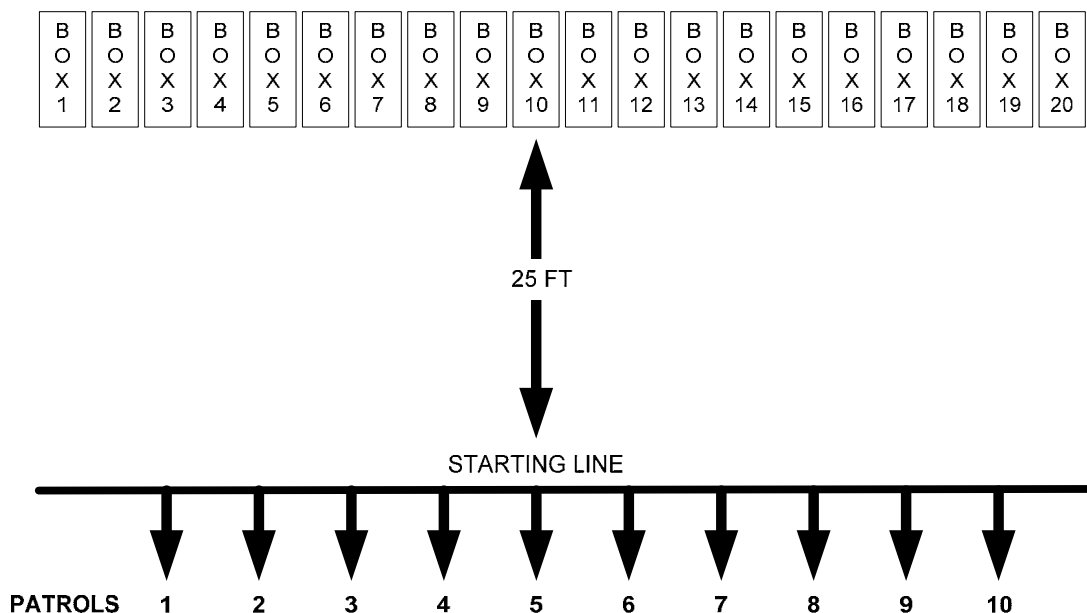
Rules:

Each patrol will line up at one of the 10 starting stations. Each patrol leader will be given a pencil and score card (on a clip board). When the patrol leader returns with the instructions, each patrol will be given 5 minutes to study the astronomy pamphlet hanging at their start station before the start of the relay and during the game. The pamphlet will not be allowed to be removed from the rope or cross the starting line.

At the start, only one member with the clip board, score card, and pencil, at a time may go to one of the 20 stations, look into the box, and decide whether the constellation is: A, B, C, or D. After marking the score card, the participant must return to the starting line, hand off the clip board for the next patrol member to go to another of the 20 stations until all 20 stations are done. All patrol members must participate and the clip board must be handed off to another member of the patrol before a new station can be started. Only one patrol member is allowed in front of the starting line at a time. The winner is determined by accuracy and ties will be broken by time. Timing stops when the 20th station is completed and the patrol member has returned to his patrol and the patrol yell is given **LOUDLY**. The pamphlet cannot be removed from the rope at the start line or a penalty deduction will be given.

The game ends when the second whistle is blown.

Game Layout:



Star Search – Find your way

Game Rotation: Patrol Name: .

Crew/Troop/Pack #: Time: min: sec: .

Circle the letter of the right answer for each of the 20 stations

<u>Station# 1-6</u>	<u>Station# 7-12</u>	<u>Station# 13-18</u>	<u>Station# 19 - 20</u>
1. A. Leo B. Orion C. Ursa Minor D. Cygnus	6. A. Cassiopeia B. Sagittarius C. Aquila D. Canis Major	11. A. Ursa Major B. Canis Major C. Libra D. Andromeda	16. A. Taurus B. Cassiopeia C. Ursa Minor D. Pisces
2. A. Aquarius B. Libra C. Taurus D. Bootes	7. A. Leo B. Aquarius C. Gemini D. Pegasus	12. A. Lyra B. Taurus C. Pegasus D. Aquila	17. A. Aquila B. Cassiopeia C. Canis Major D. Cygnus
3. A. Cancer B. Ophinchus C. Pisces D. Aquila	8. A. Cassiopeia B. Ursa Minor C. Aquila D. Gemini	13. A. Cygnus B. Gemini C. Bootes D. Ophinchus	18. A. Sagittarius B. Taurus C. Pegasus D. Andromeda
4. A. Andromeda B. Gemini C. Ursa Major D. Canis Major	9. A. Taurus B. Cygnus C. Ophinchus D. Sagittarius	14. A. Orion B. Cancer C. Ursa Minor D. Ursa Major	19. A. Pisces B. Bootes C. Leo D. Orion
5. A. Taurus B. Cassiopeia C. Bootes D. Libra	10. A. Orion B. Cancer C. Leo D. Pisces	15. A. Libra B. Aquarius C. Pegasus D. Cancer	20. A. Cancer B. Ursa Major C. Aquarius D. Gemini

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Tabulation Sheets

Rotation #1

Patrol Name	Crew/Troop/Pack#	Test Score (#/20)%	Time (min:sec)

Rotation #2

Patrol Name	Crew/Troop/Pack#	Test Score (#/20)%	Time (min:sec)

Rotation #3

Patrol Name	Crew/Troop/Pack#	Test Score (#/20)%	Time (min:sec)

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Rotation #4

Patrol Name	Crew/Troop/Pack#	Test Score (#/20)%	Time (min:sec)

Rotation #5

Patrol Name	Crew/Troop/Pack#	Test Score (#/20)%	Time (min:sec)

Top Ten Scores (time will be tie breaker)

1 st)	
2 nd)	
3 rd)	
4 th)	
5 th)	
6 th)	
7 th)	
8 th)	
9 th)	
10 th)	

Scorer's Name: _____

Verifier's Name: _____