

## Place-Based Project Ideas: Solar System and Universe

Place-based education involves students in local culture, ecology, landscapes, opportunities, and experiences so that they can connect the science concepts they are learning to something that they know already, and to something that matters to them. Research shows that place based education helps students learn, invites students to become active citizens, transforms school culture, and connects schools with the community\*. These project ideas are included to get teachers and students thinking about ways to make science education relevant to the place in which they live. This is only a starting place; the list is certainly not exhaustive, and teachers are invited to continue adding, sharing, and building the list.

These ideas were developed with the Yukon Flats School District in mind. Other districts using the Yukon Flats curriculum resource should adapt the list of ideas to fit their own district and region.

\*Place-based Education Evaluation Collaborative. 2010. The Benefits of Place-based Education: A Report from the Place-based Education Evaluation Collaborative (Second Edition). Retrieved 5/16/11 from <http://tinyurl.com/PEECBrochure>.

Project Ideas: Astronomy

What are some examples of questions students can investigate, and projects students can do, related to the solar system and universe?

Find out about traditional means of navigating by the stars and by the sun.

What are some stories from local culture about the sun, stars, moon, aurora and planets?

Identify constellations, and see how they change with the seasons.

Make a “planet walk” for your community – a scale model that shows the relative distances between the planets.

How can you find the distance to a far away object?

What makes stars twinkle?

Find out about traditional methods of telling time.

Determine the length of twilight at different times of the year by observing the time at which certain bright stars first appear and comparing with the sunset time.

Partner with a school at a different latitude to see how twilight length compares.

How does the phase of the moon relate to the number of visible stars in the sky?

Are plants affected by or influenced by the moon?

Why is the sky blue?

Find out how GPS technology works.

What types of satellites orbit above the Yukon Flats region? What types of data do they collect and how can your community use that data?

Access aurora forecast information and photograph or film the aurora.

Find out what goes on at the Poker Flat Research Range, and its Fort Yukon observatory.

Do research to find out how the extreme cycles of light and darkness in the north affect people’s health.

Create your own system for telling time according to the sun’s location in the sky.

Possible Resources:

Ten hands-on astronomy activities <http://cse.ssl.berkeley.edu/AtHomeAstronomy/>

Alaska Space Grant program <http://spacegrant.alaska.edu/>

Aurora Forecast <http://spacegrant.alaska.edu/>

Aurora Alive <http://www.auroraalive.com/>

Anchorage Planet Walk <http://anchorageplanetwalk.org/index.html>

Poker Flat Research Range <http://www.gi.alaska.edu/facilities/pokerflat>

Connections to other units and concepts: Year 1 Earth Science Weather. Year 2 Earth Science, Year 1 and 2 Life Science (information from satellites)

