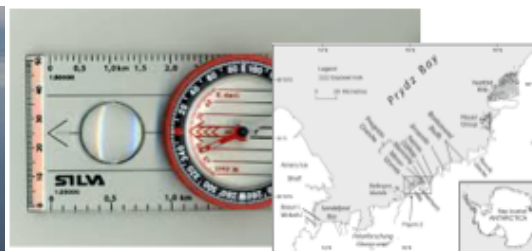


Happy January from KKI Associates!

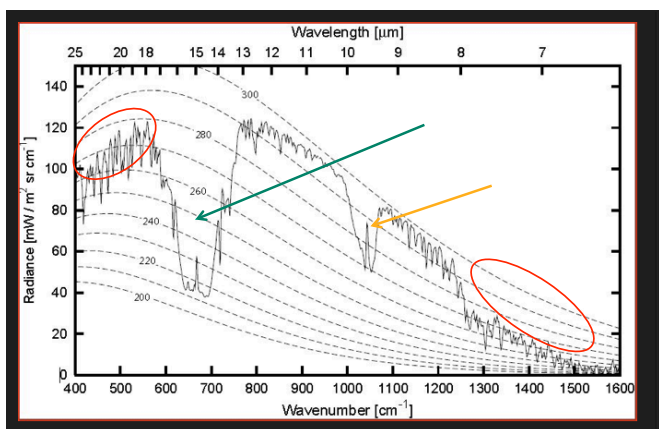
Try our 'Science in the Real World' Quiz



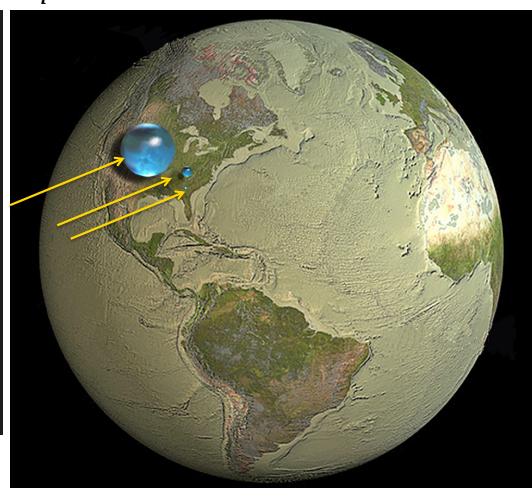
I want to fuel my private jet (above) with biofuel derived from oil seed rape. What area of crop will I have to plant to fill the plane's tanks? 5 hectares, 50 hectares, or 250 hectares?



You are navigating on a Geological expedition in Prydz Bay near the south magnetic pole. In which direction is the red end of the compass needle likely to point?



This is an infra red spectrum, but of what? And what are the red, yellow, and green bits?



What do the 3 blue spheres on this graphic represent?



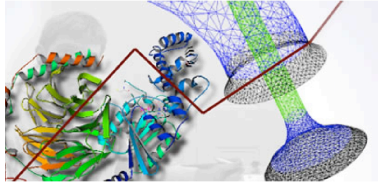
A summer day in Scotland, a summer day in the Sahara. Two identical sets of PV cells. Which produces the most energy that day?



What is this and where would you find one?

Contact us to run the full version for your School or Educational Charity.

KKI Associates helps young people 'become millionaires', by training, consulting, and mentoring their business/ career plans. In 2017-8 we trained over 250 people in workshops from Exeter to Gdansk, worked on technologies from nanotubes to anaerobic digestion, and raised money for a number of charitable educational projects



Reasons to celebrate January!

- Forget Dry January, its the California Dried Plum Digestive Health Month!
- St Knut's Day (Jan 13th)
- A total lunar eclipse (Jan 20th)
- The Sundance Film Festival (Jan 24th-Feb 3rd)
- The Monte Carlo Rally (Jan 25-8th)

For more curious January traditions and customs see:

<https://www.efdss.org/efdss-education/resource-bank/beginners-guide/bg-plough-monday-to-hocktide#bg-plough-monday-to-hocktide>

Anniversaries and things to look forward to in 2019

- Apart from cricket and rugby, other sports having a World Cup this year include netball, basketball and women's football
- Its 300 years since the the publication of Robinson Crusoe and 500 years since the voyage of Magellan
- Launch of the ESA CHEOPS telescope to determine the size of extrasolar plants
<http://sci.esa.int/cheops/>
<https://en.wikipedia.org/wiki/CHEOPS>
- 7 more countries are needed to complete the African Continental Free Trade Area (AfCFTA) <https://qz.com/africa/1507273/africas-free-trade-agreement-was-signed-in-2018/>

Why we feel SAD in January

Although we say the shortest day is December 21st, it actually carries on getting darker in the mornings well into January. In London, the latest sunrise in January 2019 is 8.06 am on January 2nd. In Edinburgh, the latest sunrise is 8.44 am on Dec 28-29th, while in New York it doesn't start getting lighter until January 8th. Have fun checking other places with this web-site:

<http://www.timeanddate.com/worldclock/sunrise.html>

Good News for 2019

- 2019 is the Year of the Pig in the Chinese Horoscope - 'a year of fortune and good luck'
<https://www.thechinesezodiac.org/astrology/chinese-horoscope-2019-year-of-the-earth-pig/>
- The container shipping industry will reduce pollution
<http://www3.asiainsurancereview.com/News/View-NewsLetter-Article/id/44380/Type/ARM/No-delay-in-sulphur-2020-limit-IMO>
- Phase change energy recovery systems <https://www.mdpi.com/2071-1050/10/1/191/pdf>
<https://www.sunamp.com>
- Frequency up and down conversion for solar cells <http://www.siser.ac.uk/research/next-generation/up-and-down-conversion>
<https://www.quora.com/What-are-some-new-trends-in-solar-energy-research-and-development-in-2018/answer/Yogi-Goswami-3>