



Tasmanian Science Talent Search 2008
49 years strong



(an initiative of the Science Teachers' Association of Tasmania)

P.O.Box 3053, Canning St., Launceston TAS 7250.
stsearch@bigpond.net.au <http://www.key.org.au/stat/>
ABN – 97 660 939 433

Newsletter No. 1 ~ Theme for TSTS 2008, “Planet Earth: Planet of Change”

I think it was Darwin who said “All is change: only change is changeless...”

A number of topics prominent in the media recently have highlighted many aspects of the global environment, which are changing dramatically, often accentuated by the actions of the human race, e.g.

- Antarctic ice-cores reveal evidence of past atmospheric conditions
- The Tasmanian Facial Tumour epidemic brings home the possibility of extinction of our state icon
- Environmental hot topics focus our thoughts on the “ecological footprints” we leave on our planet.

The TSTS 2008 theme “Planet Earth: Planet of Change” lends itself to inclusion within our science curriculum through many topics and at all grade levels.

We can consider change on our planet from many different global perspectives: geological, biological, meteorological, technological and sociological (and no doubt others as well!)

1. Geological change. Excursions to interesting road cuttings, cliff faces, and creek beds, and studies of volcanoes and glaciers can all introduce students to the concept of slow but definitive change in the earth's physical structure over the eons of time. We have in Tasmania so many stunningly beautiful natural settings to start a study of geology: the wonders of Cradle Mountain's glacial features, the towering basalt cliffs of the east coast, the resource-rich mining areas throughout the state, the “Nut” at Stanley, the eroding power of waterfalls, Launceston's Cataract Gorge, Wave Rock on Maria Island, the fascinating wonderlands of underground limestone caves. Open your students' eyes to these before the Christmas holidays, and their time at the “shack” might be so much more meaningful. If they bring out the camera and take some close-up views of a road cutting with its layers of “change”, they might instantly create the basis of a great TSTS photographic essay!

Rocks. Sedimentary, igneous, metamorphic...they all have their story to tell. A past of change, sometimes imperceptively slow, sometimes cataclysmic.

Minerals, gemstones, fossils. All fascinating. Mining, ore extraction: geology and chemistry combined.

Even a study of the deterioration of Holy Trinity Church in Hobart can be considered as a geological investigation of sandstone eroding through industrial emissions. The wearing away of the engraving on old cemetery gravestones...action of windblown eroding particles, ice, “acid rain” and lichens. Geological change can happen even within a single human lifetime.

Continental Drift and the Supercontinent of Gondwanaland give wonderful evidence of our slowly ever-changing world. The myrtle beeches of Cradle Mountain, ancient cousins of their South American long lost relatives, remind us that our solid world is not so “rock solid”. We hear of the active borders of the moving tectonic plates through the media's graphic reporting of the devastating earthquakes, tsunamis and tremors. What meaning has the saying “as solid as a rock..”?

Geology is often a discipline of science, which we overlook, in a crowded curriculum. Maybe 2008 is the year to give it a real emphasis.

The Tasmanian Minerals Council has many excellent resources:

2. Biological change. A unit on adaptations and fossils is a perfect avenue for the study of biological change on our planet. But there are so many others. The spread of introduced weeds or animal pests, the decomposition of forest litter by fungi, lichens and soil critters, GE modified crops, Super bugs and antibiotic resistance, species extinction, Devil Facial Tumour Disease, seasonal changes, salinity and changing water tables, the demise of the dinosaurs....all can be viewed from the perspective of global change.

Try a Waterwatch-type investigation along a riverbed. Study the changes in water quality and species distribution as it rushes from hilltop to sea.

Explore the Reduce / Reuse / Recycle mantra. It is the message of a race against time to prevent too much change as a result of our greed in the past and our current apathy..

Over fishing and repercussions on food webs. Can we stem the tide of detrimental global change?

3. Meteorological Change: Ten years ago, Climate Change would've hardly rated a mention in most schools, but now our lives are dominated by it, and its consequences. Meteorological change, with the extreme weather patterns seen daily somewhere around the globe, testifies to a planet in change. El Nino, El Nina, droughts, floods, rising sea levels.....a planet in change or a natural cycle?

4. Technical Change: Our world is now so much different from a generation ago. Issues of energy (renewable energy vs. fossil fuels) have implications on almost every aspect of our everyday lives.

Advances in communication technology fast-track the spreading of important global news. Maybe new, more sensitive and far-reaching tsunami warning systems can beat the race against Nature's unleashed fury.

5. Human Impact on our planet. The effects of human activities and enterprises on the global systems are profound. If the beating of a butterfly's wings in the Amazon jungle can reverberate around the world, how much greater are the effects of Man's actions? Mining, forestry, urban sprawl, rainforest depletion, construction of major dams (China: Three Gorges), will all have repercussions. Can we be responsible managers and custodians of this planet which we choose to manipulate and change for our own ends?

As many of these issues stem from the natural world, it may well be of interest to offer an introductory study at the end of 2007, so that keen students have the opportunity to consider ideas over the Christmas break. Similarly, it might be valuable to discuss Research projects with selected students who may wish to utilize some of their holiday pursuing their interest in science.

And remember, when teaching students to act responsibly, it's a case of

“Think globally, act locally”.

Let's learn to “walk the walk” as well as “talk the talk”.

I look forward to another interesting and valuable year helping students and teachers achieve great things through TSTS.

Margaret Hosford
Director TSTS 2007

stsearch@bigpond.net.au