

Overview: This 3-year SPP [1] provides PD for teachers in small rural schools in Science and environmental education. Collaboration with the main 2012 school led to this umbrella theme - **Sustainability and our Farlands Environments**.

Purpose: This SPP enables teachers to explore this theme with their children in partnership with Wimmera HUB's environmental educator mainly as in-class teacher PD [2]. The 2013 HUB SPP teacher revealed the SPP's importance:



Schools highly value this level of commitment to education within the school setting along with the opportunity to work with someone with this level of training and skill and learn from them raises the standard of science teaching and learning with many spin-offs into other areas of science and the broader curriculum.

[3]

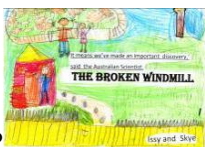
The Wimmera-Mallee has a poor participation rate in the Science Talent Search (STS), a DEECD priority Science program [4]. One of the aims of this PD is for schools to enter, for the first time, the STS in S2, by creating Science-based picture story books. These bring many learning outcomes for teacher and students [4], and develop new resources, useful for other schools to explore [5].

'20th Century Australian Science Discoveries changing life on our Farlands in Science Talent Search

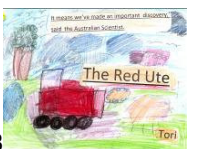
In 2013, the one-teacher 13-student F-y6 Beulah Primary School was the main Wimmera HUB SPP recipient, choosing the sub-theme *20th Century Australian Science Discoveries- changing life on our farlands*. Their 11 session in- and after-class teacher PD program [6] focused on building teacher (and children's) capacity about the local environment in S1, then moving onto the STS book competition - *"It means we've have made an important discovery for farming," said the Australian scientist.*" In S2 this was completed, presented and peer reviewed, submitted to the STS, assessed, their success celebrated (photo above left) and their SPP experience evaluated.



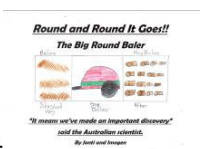
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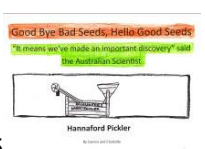
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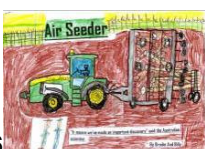
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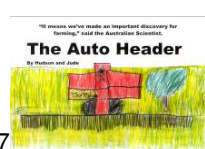
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Beulah PS STS Books

the Beulah PS SPP in S2 focussed on STS Science Picture Books

If, in April, you had shown the teacher and F-y6 children what they would produce in July, they would not have believed it of themselves! The **STS stories** [7], in the box left, that they created concerned: salinity (1), machinery for windmills (2), vehicles (3), baling (4), pickling (5), cropping (6) and harvesting (7). They were fantastic, child-centred, locally based physical products of learning that could also inspire others to explore issues about farming, Science and sustainability.

Some of the **learning outcomes** for this SPP [5], specific to these STS books, are:

- full of the children's own text, up to a maximum of 300 words (English/literacy, regional priority)
- and of the children's own drawings, often labeled, to communicate the Science (Art)
- telling a Science story that was based in the children's families and farms, (Science)
- concerning machinery they had on home farms (collaborating with local business)
- reporting learnings about an Australian farmer/Scientist/innovator, (Science, History)
- and benefits this had brought to farming, to contribute to more sustainable farming then, with modifications and benefits through to today (Education for Sustainability, History, Science)
- enunciating this into a Key Science Ideas page as required by STS (Science, English)
- and identifying resources in bibliography and acknowledgements also required by STS (English)
- following a set format (communication, Science, Design)
- wherein children were mentored, but made their own decisions, for their books. (Pers Dev)

It was a tall order for some of the younger (F-3) BPS students, but BPS showed how well a rural school can succeed at the STS competition, with its hundreds of entries, mostly by city schools. [8] Under Wimmera HUB's SPP mentorship, Beulah PS developed its **capacity to succeed** at STS:

- All students F- y6, including an integration student, entered– **no exclusions**.
- Most worked in **pairs**, sharing the text and drawing work to create their books.
- The **integration student** (a y3) was given additional support to create her story and pictures.
- All children were clearly **proud** of their completed books.

"I like my book the Red Ute" (Y3- integration student) [9]

- All books were presented at a "Beaut Picture Science Field Day" **peer review** session. The children read their stories out in front of a big screen showing their drawings. They produced very positive comments, thoughtful questions and suggestions for each other. [10]
 - e.g., best features - *"timeline"*, *"showed how it works"*; suggestions- *"bigger text"*, *"speak louder"*
- 12 of the 13 **children** named the books as the **most memorable** thing in the SPP project [9]
- *"I will most remember making the books and sharing it with the class and what they thought (Y6)*
- The STS books were named by the **teacher** as the **most worthwhile** activity of the SPP [11]
 - "Working through the process and reading the final product of the key science ideas, the source material and learning the science in the illustrations" (teacher)*
- **STS awarded** certificates for all 7 books (see photo top left). Six of the 13 students received bursaries - BPS was the only Wimmera and only rural school to win a bursary, and won 3 of 50! [8]
- **Positive publicity** for the school in the media of school newsletters and the local paper [12]

Crossing school boundaries: sharing our Sustainability and Farmland Environments resources

In s2, these 7 STS books, together with the 6 2012 ones, became valuable resources to stimulate interest in farmland environments and develop adult and children's capacity to discuss sustainability issues. They were promoted as part of teacher PD's, to other schools in the Wimmera, at Greening Australia's (GA) Narrmbool Toolbox, and at Tawonga PS.

Supporting collaboration and partnerships

Supporting formal and informal arrangements that facilitate the exchange of practice, ideas, opportunities and resources across school boundaries and draw on the broad range of expertise available within our learning community

www.education.vic.gov.au/about/department/vlc/Pages/actionplan.aspx [17]

In S1, the Wimmera HUB SPP environmental educator had facilitated the Beulah PS to draw on the expertise of its families and their businesses for resources in farming for the 2013 project (reported in S1 2013 learning story).

Now in S2 the **challenge** was to facilitate sharing the unique resources created by a small rural school, across its local boundaries into a wider learning community, to encourage others to think about sustainability and farming. In 2012, Wimmera HUB's SPP environmental educator had organized in-class PD's at several Wimmera schools using the 2012 St Josephs PS STS books, as National Science Week (NSWk) events (reported in S2 2012). Each year, the STS Creative Writing topics are linked to the National Science Week (NSWk) theme. The 2013 Beulah PS STS books were finished later than in 2012, and not in enough time to advertise and organize a similar round of events for NSWk 2013. Other opportunities were sought, which combined the two sets of STS books and took them out of the Wimmera.



Solution: 1 Wimmera HUB SPP provided a teacher PD workshop on **Sustainability and our Farmland Environment** at GA's Narrmbool Toolbox. It aimed [13] to encourage participants to explore sustainability issues from a farming point-of-view, especially if living/teaching in a rural area, and used the 13 children's STS books from the two Wimmera HUB SPP schools as resources to promote discussion. The eight PS teachers from the Ballarat to Geelong area and seven other sustainability educators all had a rural background. The STS books covered issues of dry times, pests, salinity and machinery for broad-acre farming sustainability [8]. There were two forms of evaluation, one formal by GA, with the comment after collation, and mine, symbolic.

"The workshop on sustainable farming education was excellent with many good teaching ideas." Pers. Commun. J. Mead, G. A. Mine used symbols to report change from the workshop, with light bulbs for "a new area of interest", etc (shown below):

Qn How much have you learnt about Sustainability and our Farmland Environment? replies: 2 PS ; 4 PS & 5 sust eds ; 2 PS & 2 sust eds ; 0 ; 0  N=15

Most had learnt 'lots' from the session, with the two 'light bulb' PS teachers showing the biggest change – new interests. Two of the teacher participants also wrote messages back to the child book author's, which were passed on to them.



Solution 2 Another opportunity arose to trial this PD in the **Kiewa Valley**, far from the Wimmera. Offered at short notice, one school could participate. Wimmera HUB SPP provided an **in-class (composite F-3 level)** PD session at Tawonga PS. To follow the class' previous Science session, the focus was on *living things on farms*, for which 6 of the 13 STS books were relevant. GA aims were modified to specific F-3 aims [14] and potential learning outcomes to fit the suite of 6 STS books [15]. We had a fantastic session with 2 teachers and 21 children, exploring farming environment parts and using STS books (photo left) for reading, discussion and reporting on sustainability issues for living things on farms.



The 'full-body' evaluation (photo left) quickly reported change from the PD content of the environment, and sustainability issues: arms up = all new; standing = lots new; kneeling = something new, and sitting cross-legged = thought about something in a new way; just sitting = nothing new. While we were delighted to find children standing and especially with arms up, those sitting were just as important –representing farm children who had been main contributors to discussion with local information, echoing 2012's Wimmera sessions.

"Keep this program going! This information is extremely important for children to be aware of" Tawonga PS F-3 teacher comment on SPP in-class teacher PD session [16]

As an example of the importance to teacher PD and student learning outcomes from '**collaboration and partnerships**' (box above), the development of the Wimmera HUB SPP into the *Sustainability and Farmlands Environments* theme has provided new ideas, practice, opportunities and resources of value for teachers, educators and children beyond their original Wimmera school boundaries. Hopefully, for this SPP's 3rd year, when a third set of books will be made in 2014, these ideas and their resources will spread further, coinciding with the International Year of Family Farming.

Supporting pdf docs: [1] HUB LWEEN SPP aims; [2] HUB LWEEN SPP partnerships; [3] HUB SPP eval BPS teacher PD; [4] DEECD Priority Science Project re STS; [5] HUB SPP 2013 BPS learning outcomes; [6] 2013 Wimmera HUB SPP BPS program; [7] STS stories to be on updated BPS website; [8] HUB SPP 2013 BPS STS results; [9] 2013 S2 BPS Student SPP eval; [10] BPS STS peer book reviews; [11] 2013 BPS SPP teacher evaluation; [12] BPS SPP media S2 2013; [13] GA Nbl SPP aims; [14] TPS SPP PD F-3 aims; [15] TPS SPP Fto2 curric outcomes; [16] TPS HUB SPP eval; [17] Vic Lng Cy Action Plan