KAADADJINY BINDI-BINDI: UNDERSTANDING BUTTERFLIES

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Coolbinia PS
2018
Outline

• Curriculum – LAs, CCPs & GCs
• STEAM – solving real world problems
• Coolbinia’s butterfly journey
• Inquiry process
• Your planning session
STEAM + Cross Curriculum Priorities

Three priorities:

- Aboriginal and Torres Strait Islander histories and cultures.
- Asia and Australia's engagement with Asia.
- Sustainability.
STEAM +
General Capabilities

- Literacy.
- Numeracy.
- Information and communication technology (ICT) capability.
- Critical and creative thinking.
- Personal and social capability.
- Ethical understanding.
- Intercultural understanding.
STEAM + Sustainable Development Goals (SDGs)

i.e. real world problems
Bindi Bindi Basics

- Real world problems
- Whole systems thinking
- Student focused
- Curriculum based
- Hands on engagement
- Critical & creative thinking
- Intercultural understandings
- Social responsibility
- On going – not just for a term?
- Actions making a difference
Student Focused: answering their questions

Local butterflies:
- 113 species in WA.
- 18 found on where else in world.
- 53 found in S-W of WA.
- 43 in Perth region.

Students’ concern:
Sadly, we usually only see the Cabbage White around Perth. We wanted to do something about this!

… Habitat loss, species loss.
… Different caterpillars need different plants for their caterpillars to feed on. These plants are called host plants.
SDG 15  Life on Land: Butterfly conservation

Coolbinia’s butterfly journey … 1958 … 1995 … 2016 … 2018 plantings
Aboriginal CCP Links

Students worked with and learned from:
- Dr Noel & Alison Nannup, Noongar educator and author (left top)
- Sharyn Egan, Noongar artist (right below)
- Jade Dolman, Noongar artist (centre below)
- Leonard Thorn, Noongar educator (left below)
- Coleen Sherratt, Noongar language
Asian CCP Links

Students from the Perth and Indonesian schools shared their learning about butterflies.
Sustainability CCP

- **Attitudes**: Year 3s releasing their butterflies (bottom centre).
- **Knowledge**: Report following butterfly bush walk with Noongar educator (top right).
- **Skills**: Year 3/4s with Yr 1 buddies learning the skills to plant host plants in the bushland so they survive (bottom right).
- **Action**: Planting host plants in the school grounds at lunchtime (bottom left).
Science

• Labelled scientific drawing of the Western Grass Dart by PP child (top right)
• Life cycle of Monarch butterfly on milkweed (host plant) by Year 2 class (middle right).
• Releasing butterflies from butterfly castle (bottom right).
• Studying Monarch chrysalis (bottom centre).
• PPs using their proboscis (unfurling whistle) (bottom left).
Artworks

PP child making a Wedge Grass Skipper:

Year 4 butterfly zentangles and quilling:

Chequered Swallowtail on scurf pea (host plant) created by Year 3s with Sharyn Egan:

Varied Hairstreak on flowering wattle (host plant) created by Year 3s with Sharyn Egan:
This painting was created by Year 3-6 students of Coolbinia Primary in a biodiversity workshop with the artist Angela Rossen. www.angelarossen.com
Games

• Created 3 games

• KTK Conference: Change games when song starts – move clockwise

• Games include:
  1. What butterfly is that?
  2. Memory
  3. Bingo
What butterfly is that?
Digital & Design Technologies

- Problem solving
- Models
- Enclosures
- ICT – book design

Photo of students holding their models removed
Acknowledgments

In 2016, we studied Bindi-Bindi (butterflies). All classes at Coolbinia Primary School contributed to the creation of this book. Year 6 students (Rooms 11 and 12) wrote most of the text and compiled the book. We would like to acknowledge with thanks those who provided support and funding for this book.

Our book is called *Kaadadiiny Bindi-Bindi* because in the Noongar language it means 'Understanding Butterflies'. *Kaadadiiny* means 'to understand' and *Bindi-Bindi* means 'butterflies'.

Butterflies are marvellous creatures! They are stunning and beautiful. There are 113 different species of butterflies across Western Australia. Eighteen of these species are found nowhere else in the world, and fifty-three species are mainly found in the southwest of Western Australia. Although forty-three species may be seen in the Perth region, sadly, we usually only see the Cabbage White around Perth. We wanted to do something about this!

Butterflies are under threat! Habitat loss, species loss. Growing plants eaten by the caterpillars in your gardens allows butterflies to breed and increase in number. For example, the caterpillars of the Two-spotted Line-blue eat only Coolong (Golden Wreath Wattle) or the Red-eyed Wattle. All butterflies go through the same stages of egg, caterpillar, chrysalis, adult, but different butterfly species need different plants for their caterpillars to feed on. These plants are called host plants.

Since aboriginal people have a profound connection with the land, we worked with numerous Noongar educators, artists and storytellers to deepen our understanding of environmental interconnections that support a greater understanding of butterflies.

Introduction

About the Cover Paintings

These paintings were created by Kindy and Pre-primary students of Coolbinia Primary School in a butterfly art workshop with Jade Dolman, Noongar artist (http://www.jadendangke.com/).

The butterfly on the left creatively represents three local butterflies and the butterfly on the right represents two 'blues'.

Book Extract
Outcomes

• Effective and meaningful conservation project – cadet interest & concern.

• Positive stakeholder feedback
  - cadets, staff, parents, Asian school teacher & students, Wildlife Show staff & attendees.

• Local links — e.g. Scitech, City of Perth, other schools, conferences (Kids Teaching Kids, MK Future Thinkers).

• Global links — e.g. Asian schools, conferences, publications.
Artopia festival

On going actions
Removed: Video clip of class teacher and students releasing butterflies into host plant garden.
Future Actions

Butterfly bush walks with students, teachers and community members.

Long-tailed Pea-blue Yr 4s with Sharyn Egan.

Continue planting butterfly host plants.

Release Monarch butterflies
Outcomes

• Effective and meaningful conservation project – cadet interest & concern.

• Positive stakeholder feedback - cadets, staff, parents, Asian school teacher & students, Wildlife Show staff & attendees.

• Local links — e.g. Scitech, City of Perth, other schools, conferences (cadets & adults).

• Global links — e.g. Asian schools, conferences, publications.
Reflections

• Any questions?
• What did you learn?
• How could you use something from this workshop at your school?
Inquiry Process

1. Tuning in
2. Finding out
3. Sorting out
4. Making or drawing conclusions
5. Going further
6. Reflecting and taking action
Inquiry Process

Based on Kath Murdoch’s Inquiry Cycle PL- 26th & 27th July 2018:

1. **Tuning In** – KWL chart, questions(open & closed)
2. **Finding Out** – research, experts, surveys, books and other resources
3. **Sorting Out** – How can they sort the information? Changes to be made?
4. **Going further** – How to show what they have learnt e.g. posters, PowerPoint, booklet
5. **Making Conclusions** – What do they know and understand about the problem? What are they going to do with what they have learned? Referral to assessment rubrics on content and skills.

6. **Taking Action** – Design the product, construct the product, deliver the product (audience) and seek feedback, reflection – peer and self

- Teacher acts as a facilitator rather than a director
- Process is emphasised more so than the end product
Inquiry Process: Tuning In

• Prior knowledge
• Formulating questions to drive the inquiry
• Feelings about the topic
• Use pictures and videos of butterflies to stimulate thought and reactions
• Mind maps and KWLH charts
Resources

Butterfly Kits:
MiniBeasts BugShop, Louise Peters, Mobile: 0411 525 553,
Email: butterflydreamsperth@outlook.com

Monarch Butterfly Lifecycle Kit $120 + more for extra plants
Reorder Butterfly Lifecycle Kit $60

Books:
See wide range of books on display, suitable for Kindy to Year 6 and teacher Resources.
Useful Websites

Butterflies of WA

- file:///C:/Users/E4045432/AppData/Local/Microsoft/Windows/INetCache/IE/6HKC2AGS/butterflychart.pdf

Other Sustainability Sites:

- https://www.stem.org.uk/
- https://www.coolaustralia.org/
- https://practicalaction.org/
- http://www.remidawa.com/
Finding Out

• Finding resources and collecting data
• Integrated Approach -
  o All LAs e.g. Maths – collating data on butterflies
  o Surveys – (local or personal level)
  o Resources – literature, games, teaching activities
Finding Out: Curriculum

- English – reading informational texts and a variety of literature.
  - Viewing – range of photos (screened) and videos
  - Interview a butterfly expert
  - Note Taking skills using books and computers
  - Vocabulary – lepidoptera, chrysalis, abdomen, larva
  - Discussion – co-operative learning
- Science – external features, life cycles, adaptations
- Maths – butterfly tallies, graphing
- HASS - Researching local and Asian butterflies
- Design & Digital technologies – models, enclosures, cameras, technologies skills used to design a butterfly sculpture from recycled materials (Remida workshop – construction with set criteria), reflects on designs to improve.
- The Arts – visual, displays, performances
Sorting Out

- Making sure the data is correct & organising data
- Venn diagrams - comparisons
- Note taking to be presented as a book or poster of a butterfly – framework of reasons, difficulties, challenges, successes and the future.
- Maths – tables, graphing and interpretation
- The Arts – visual, drama and dance
Making Conclusions

• Sharing your data
• Who is your audience
• Presenting your knowledge – e.g. incorporated all knowledge learnt at school assembly, wildlife show
  • Display butterfly designs ay local library, books/posters
  • Dramatise the life cycle of butterflies
  • Inform audience using narration of information
  • Visual displays using IT
  • Dance performance
  • Song about butterflies and how we can help!
• Assessing your work – self reflection and teacher assessment
Taking Action

• Reflecting on what you have learned
• Thinking about how you will use what you have learned
• Checking how your feelings have changed
• Actions you will take e.g.
  o Ongoing planting program
  o Encourage parent and community action
  o Public displays
  o School website
PLANNING

How can you create a butterfly project at your school?
Issues to Consider

Develop an Implementation Plan:
• Make links to school Business & Operational Plans.
• Consult staff and develop integrated LA/inquiry plan for your butterfly program.
• Consider integration with specialist teachers e.g. The Arts, Music, Design Technologies.
• Book PL date/s for your school staff.
• Apply for funding ahead of unit implementation – need grants? e.g. PALS, NAIDOC, Landcare, River Rangers.
• Purchase resources – books & other resources?
• Make own enclosures the term before the kits arrive?
• Book purchase of butterfly kit/s from shop – which term will the program be implemented in your school?
• Order butterfly host plants for planting program.
Planning a unit of work

1. Start with the end in mind
2. Start small, workable in your context
3. Draw from the past
4. Hands on – Minds on
5. Be flexible
6. Involve students & keep them engaged and informed
7. Give useful feedback
8. Factor in room for achievement
9. Plan for accountability
10. Have room for conflict
Set the scene and stimulate prior knowledge

• What do you know about butterflies in our local area?
  o What are your thoughts and feelings about butterflies?
  o Sharing personal experiences

• Pose a big questions to solve a problem
Other Planning Issues

- **When** - 1\textsuperscript{st} or 4\textsuperscript{th} term – in consultation with supplier
- **School links** – Business Plan & existing school programs
- **What will work in your school?** – class, POL or whole school?
- **Involve school specialists?** e.g. song
- **Tasks** – funds, library, school calendar
- **Reporting**, evaluation, community ed, promotion, ongoing enviro commitment
- **Problems** – milkweed & butterfly diseases
- **Enclosures** – make your own from recycled materials
- **Plan for grants** – PALS, Landcare, …
- **Aboriginal languages** – Coleen Sherrat, Statewide services
Integrated Planning

• Start with the WA curriculum requirements for your year level across the learning areas

• Incorporate Cross–curriculum priorities: e.g. Sustainability

• General Capabilities:
  Literacy
  Numeracy
  Information and communication technology (ICT) capability
  Critical and creative thinking
  Personal and social capability
  Ethical understanding
  Intercultural understanding.

• Brainstorm a variety of activities and strategies that could be incorporated in the unit of work
Planning

- A3 sheet of paper – divide into 8 sections and list the learning areas
- Add CCPs & GCs where there is a natural fit

<table>
<thead>
<tr>
<th>English</th>
<th>Mathematics</th>
<th>Health</th>
<th>Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>Technologies</td>
<td>HASS</td>
<td>Languages</td>
</tr>
</tbody>
</table>
Thank you
Any more Questions?