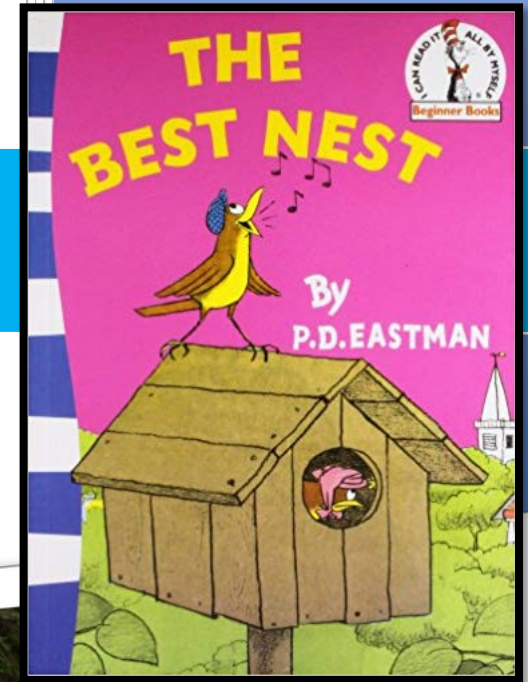


The Best Nest – Stage 1 Outcomes

A STEM Challenge based on the picture book '*The Best Nest*' by PD Eastman



The Best Nest – STEM PROGRAM – <i>Program Duration 2.5 hours (day visit) plus school breaks</i>									
<p><u>BIG IDEAS:</u></p> <ul style="list-style-type: none">• A bird nest is a place where a bird lays its eggs.• Birds make nests to incubate their eggs and protect their babies• There are many different types of nests. A ‘cup’ shaped nest is the most familiar and common type of nest• Twigs, moss, wool, feathers, leaves, grass, mud and even cobwebs are popular nesting material <p><u>KEY INQUIRY QUESTIONS:</u></p> <ul style="list-style-type: none">• What type of nest material is strongest?• Which shape of nest supports the heaviest load?• How long does it take to make a nest?	9.	Post visit – assessment							
	8.	Building challenge							
	7.	Sorting natural vs man-made							
	6.	Collection of nesting materials							
	5.	Bird watching and identification							
	4.	Threatened, Endangered, Extinct							
	3.	Observing real nests							
	2.	Teacher Reading – ‘The Best Nest’, by PD Eastman							
	1.	Review the needs of living things							
Cross Curricular Outcomes – SCIENCE AND TECHNOLOGY									
<p><u>SKILLS</u></p> <p>ST1-1WS-S observes, questions and collects data to communicate and compare ideas</p> <p>ST1-2DP-T uses materials, tools and equipment to develop solutions for a need or opportunity</p>									

<u>KNOWLEDGE AND UNDERSTANDING</u>									
ST1-4LW-S describes observable features of living things and their environments	✓	✓	✓	✓	✓	✓	✓	✓	
ST1-5LW-T identifies how plants and animals are used for food and fibre products			✓		✓	✓	✓	✓	✓
ST1-6MW-S identifies that materials can be changed or combined			✓			✓	✓	✓	
ST1-7MW-T describes how the properties of materials determine their use						✓	✓	✓	✓

WORKING SCIENTIFICALLY SKILLS CONTINUUM

Questioning and Predicting

- pose questions about familiar objects and events

- respond to posed questions

- make predictions about possible findings

Planning and conducting investigations

- explore and answer questions through participation in guided scientific investigations

- compare observations with those of others

- develop collaboration skills to effectively conduct investigations

- make safe choices when using materials and equipment

Processing and analysing data

- use a range of methods to sort and collate information

Communicating

- represent and communicate observations and ideas in a variety of ways

CONTENT- LIVING WORLD



ST1-4LW-S describes observable features of living things and their environments

- identify that living things live in different places that suit their needs  

✓

✓

✓





- design and produce an environment to cater for the needs of a living thing, **DesT**    

✓

✓

✓



ST1-5LW-T identifies how plants and animals are used for food and fibre products

- investigate ways people use scientific and technological knowledge and skills to sustainably grow plants and animals to produce fibre for clothing and/or shelter **SciT**    

✓

CONTENT – MATERIAL WORLD

ST1-6MW-S identifies that materials can be changed or combined

- investigate how materials can be changed by bending, twisting and stretching **DesT SysT**  

✓





✓

- investigate how different materials can be combined **SciT**  

✓

✓

ST1-7MW-T describes how the properties of materials determine their use

- design and evaluate a product, demonstrating understanding of the suitability of materials for a purpose
DesT SysT    

✓

CREATIVE AND CRITICAL THINKING LEARNING CONTINUUM (ACARA)

Inquiring – identifying, exploring and organising information and ideas element

- pose questions to identify and clarify issues, and compare information in their world
- identify and explore information and ideas from source materials
- organise information based on similar or relevant ideas from several sources

Generating ideas, possibilities and actions element

- build on what they know to create ideas and possibilities in ways that are new to them
- identify and compare creative ideas to think broadly about a given situation or problem
- investigate options and predict possible outcomes when putting ideas into action

Think about thinking (metacognition)

- describe the thinking strategies used in given situations and tasks
- outline the details and sequence in a whole task and separate it into workable parts
- use information from a previous experience to inform a new idea

Analysing, synthesising and evaluating reasoning and procedures element

- identify reasoning used in choices or actions in specific situations
- identify alternative courses of action or possible conclusions when presented with new information
- evaluate whether they have accomplished what they set out to achieve

9. Post visit – assessment	✓	✓							
8. Building challenge	✓	✓							
7. Sorting natural vs man-made	✓	✓							
6. Collection of nesting materials	✓	✓				✓			
5. Bird watching and identification	✓	✓							
4. Threatened, Endangered, Extinct	✓	✓							
3. Observing real nests	✓	✓	✓						
2. Teacher Reading – ‘The Best Nest’, by PD Eastman	✓	✓							
1. Review the needs of living things	✓	✓							

<h1>The Best Nest – STEM PROGRAM</h1>	
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BIG IDEAS:

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MA1-11MG measures, records, compares and estimates volumes and capacities using uniform informal units								
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[illegible]

- | | | | | | | | | | |
|---|--|--|--|--|--|--|--|---|---|
| <ul style="list-style-type: none"> record capacities by referring to the number and type of uniform informal unit used | | | | | | | | | |
| <ul style="list-style-type: none"> compare the capacities of two or more containers using appropriate uniform informal units | | | | | | | | ✓ | ✓ |

- [illegible]

- | | | | | | | | | | |
|--|--|--|--|--|--|--|--|---|---|
| • estimate capacities by referring to the number and type of uniform informal unit used and check by measuring | | | | | | | | ✓ | ✓ |
|--|--|--|--|--|--|--|--|---|---|

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REEC Incursion – Program Outline

The Best Nest– STEM and Story books

BIG IDEAS:

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Suggested Learning Experiences

Suggested Website Links for Learning – following incursion

Language focus – Word Wall

Suggested Teacher Resources

Setting the Scene – 10 min

- Discuss concept of STEM learning. What does STEM stand for? Why are schools focussing on activities that incorporate STEM key learning areas?
- Discuss the needs of living things. Recount what students already know and add the remainder as a list on the board. Discuss the need for shelter. What do we need to be sheltered from? How do humans find or make shelter? How do other living creatures find or make shelter?

Teacher Reading – 10 min

- Read 'The Best Nest', by PD Eastman. Question why a bird might need a nest. Discuss options put forward and explain that a bird needs a nest to 'hatch' their eggs and provide shelter and protection for their babies.

Learn more about the birds you might find in the Riverina and South West Slopes

http://visitwagga.com/__data/assets/pdf_file/0017/52046/RSWSNT-BirdTrailsBooklet.pdf

App recommendation for bird ID on iPads:

<http://sunbird.tv/sunbird-apps-ebooks/app-bird-song-id-australia/>

NB – Word Wall words should be introduced one at a time in context, not displayed in whole. For great tips on how to make a Word Wall work, see the following link:

<https://www.scholastic.com/teachers/articles/teaching-content/word-walls-work/>

Words for your Word Wall

bird
egg
endangered
extinct

The Best Nest, by PD Eastman



Observing Nests – 15-20 min

- Look at nest examples provided by REEC staff, and those shown on a PowerPoint presentation. Why do different birds create different sorts of nests? How do they construct them?
- What sort of materials do birds use to create a new nest? Where do they get these resources? After making the realisation that all nest materials must come from the environment, make a list of the type of materials that a bird would be looking for in order to make a nest.

Threatened, Endangered Extinct – 5 min

- Students will look at the next 3 slides on the PowerPoint. Discuss the birds that are commonly seen throughout the Riverina area, those that are sometimes seen and those that are rarely seen anymore due to specific factors. Introduce terms **threatened**, **endangered** and **extinct**. Discuss ways that people can help birds survive in their natural habitat.
- Advise the students that they will become ornithologists now, and will observe birds of their own area. Introduce them to the binoculars and the way that they work. Explain the general 'rules' for bird-watching.

Bird Watching – 20 min

- Can you communicate with the birds? Students will be given a manual 'bird caller' to interact with the possible native and introduced species of the area.



Like 'Shazam' for birds, use this app to record bird calls and songs. Apart from the special automatic recognition feature the app also offers other interesting content:

- gallery view to identify birds by their families
- index view to search for birds
- monograph to each bird with photo, description, information on different names (e.g. common and scientific), family and genus as well as distribution status
- manual ID function to identify bird songs by determining six simple aspects, e.g. if the song is melodious or not, whether pitch and volume are high, medium or low etc.
- quiz for identifying bird songs
- search function
- map and list your personal recordings

feather
grass
hatch
incubate
leaves
man made
natural
nest
ornithologist
shelter
sticks
threatened
tree
twigs

Resources from REEC

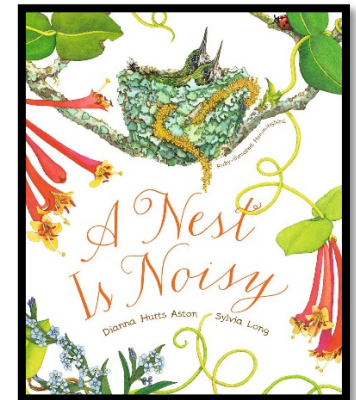
REEC will provide the following items on the day of your visit:

- 'The Best Nest', (by PD Eastman)
- Reusable bags
- Dried grasses
- Bird callers
- Binoculars
- iPads
- Common birds of the Riverina ID sheets

REEC Teacher Package

- Program
- PowerPoint accompaniment
- Word Wall
- Common Birds of the Riverina ID sheet A3 poster (*Can You Find Me?*)

Suggested Picture Books for Post-Visit activities



A Nest is Noisy – Diana Hutts Aston

This book explores the point that not all creatures who are nesting are birds.

- Can you see the birds? Using the binoculars provided, students observe any bird life in the trees, air and ground. Focus on any potential nest building that might be happening in the trees. Use the Bird ID sheets to see if you can name any birds seen.

Nest building resources collection – 15 min

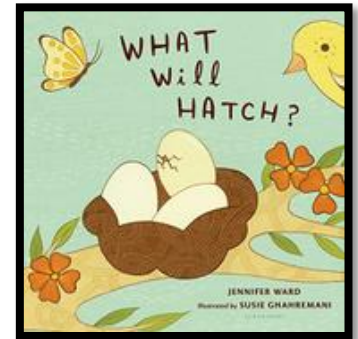
- Within the school environment (and surrounding areas if you have permission), go on a nature walk. Take a recyclable bag for each student and ask them to look carefully for nesting materials and collect them. Be sure to advise they should not be pulling out trees or plants that are growing.

Sorting resources – 5 min

- Back in the classroom, sort the materials into groups – ‘natural’ and ‘man-made’. Explain that found objects birds use to build nests can be from either group. Ask students to give an explanation of their understanding of how they know what they’ve sorted is natural or man-made.

Modelled examples of nest building – 5 min

- View embedded videos in PowerPoint file of a robin building a nest in time-lapse, and a hummingbird creating a nest. How are the nests different? How are they similar?
- What strategies did the birds use to ‘fix’ the grasses and fibres together so they were more solid?



What Will Hatch? - Jennifer Ward.

Just like ‘A Nest is Noisy’, students are exposed to many animals that hatch from eggs. Begins idea of ‘life cycles’.

<p><i>Building a Nest – 20-30 min</i></p> <ul style="list-style-type: none">• Now it is the students’ turn to construct their own nests. Teachers should break students into paired groups. Each group are given the same amount of dried grasses from REEC to ensure that there is enough available materials to construct a basic nest.• Discuss how it could be possible to ‘stick’ all the materials together to construct a nest without the use of glues or tape that are not natural items or accessible to birds! The ‘found’ materials collected by students should also be incorporated in the nest design. <p><i>Recording for Assessment (during nest building process)</i></p> <ul style="list-style-type: none">• REEC will provide iPads so that teams can be interviewed in relation to their nest design, challenges faced and strategies used to construct the nest. Teaching staff may transfer video files for later assessment.			
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