

Teacher Notes

Themes

- Adaptations
- Life cycles
- Conservation

Key learning outcomes

- Recognise the way characteristics of living things help them survive in an environment by helping them avoid becoming prey, finding food or having more offspring.
- Understand behaviours that animals have that help them find mates to help make a new generation.
- Comprehend how human behaviours can harm animals like seadragons, or help conserve their numbers so future generations can appreciate them.

Key curriculum areas

- **Science:** Science Understanding (Biological sciences)
- **English:** Language; Literature
- **Arts:** Media arts

Publication details

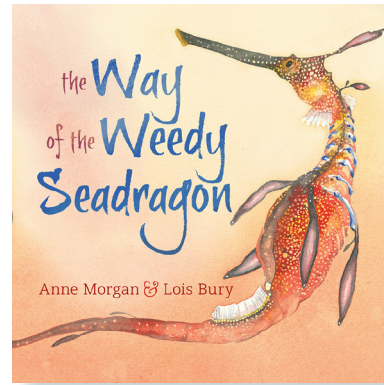
The Way of the Weedy Seadragon,
ISBN: 9781486313952

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The Way of the Weedy Seadragon

Anne Morgan and Lois Bury

About the book

Can you imagine a strange and colourful fish that looks like a dragon? It can't fly or breathe fire, but it is an excellent dancer!

The weedy seadragon is an amazing underwater fish with a talent for camouflage, weird eating habits and a unique courtship dance. But its habitat and future are threatened.

This enchanting story takes you under the sea to meet this mysterious sea creature, and reveals its weird and wonderful ways. Do you believe in dragons?

Written by Anne Morgan, and beautifully illustrated by Lois Bury, *The Way of the Weedy Seadragon* invites you to dive into the astonishing lives of one of the world's most curious sea creatures.

Recommended for

Readers years 2 to 5 (ages 6 to 9).



Teacher Notes

About the author and illustrator

Anne Morgan has a PhD in writing and is the author of a number of children's books and a volume of poetry. Anne trained as a Biology, Drama and English teacher, and has taught in Tasmania, the Northern Territory and China. She has also worked at the Australian Antarctic Division and at the former National Oceans Office in Hobart. These days she has an adventure a day (real or imagined) at Adventure Bay, Bruny Island.

Lois Bury is an artist based in Tasmania and has illustrated several books for children. She is a founding Director of Bruny Island Foundation for the Arts, bringing visual and performing arts to the Island.

Pre-reading activities

To prepare students for reading *The Way of the Weedy Seadragon*, they should be familiar with aquatic ecosystems and the diversity of living things that make their homes in them.

Discuss the kinds of pets the children keep at home or might find in a pet store. Write them all down on the board and create a visual map of their needs, encouraging students to consider things like food, shelter and water.

Focus on aquatic pets such as goldfish, inviting students to share descriptions of colours, sizes and unique physiological features. Ask them where the animals might live in the wild, or whether they might survive in the ocean. Start a conversation about breeding fish and what might be required to start a business in selling animals for aquariums.

Discussion questions

Science

1. The weedy seadragon is a species of fish. Ask students to name types of fish they already know about, and describe the things they have in common. What does the weedy seadragon have in common with these animals? What makes it unique?
2. The weedy seadragon looks a bit like a dragon, with its long snout and tail. Ask the students if they consider these fish to be real. How would they know it's real if they've never seen one with their own eyes?
3. Show the students the two pages of the weedy seadragon hiding among the seaweed. What features of the weedy seadragon help it hide well? Ask the students what characteristics they'd need to have to hide more easily around the classroom or school.

Teacher Notes

4. Ask the students what kinds of features might help an aquatic animal swim incredibly quickly. Would they expect the weedy seadragon to swim fast? Reading *The Way of the Weedy Seadragon*, ask the students how the weedy seadragon avoids becoming prey if it can't escape fast enough.
5. Like many related species, the weedy seadragon's eggs are nurtured and protected by the male. Ask the students how many of these will grow up to have babies of their own? Discuss why the seadragon might have so many babies, while we only have a few in our lifetime.

English

1. A number of words throughout *The Way of the Weedy Seadragon* are coloured (these are all defined in the glossary). Show these to the students and ask what features the words have in common. Write them down separately and find common characteristics between them. Do they refer to actions or objects? Do they help describe a thing, or do they name it?
2. The last few pages of *The Way of the Weedy Seadragon* read very differently to the story itself. Ask students why the author might have set it out this way. What makes the sections so different? Which allows them to use their imagination? Which contains more facts and information?

Arts

1. *The Way of the Weedy Seadragon* is beautifully illustrated using bright watercolours. Ask the students how the illustrations make them feel. Would photographs have been better or worse? What if the artist had used colouring pencils, or no colour at all?
2. Read the pages explaining that some adult weedy seadragons may grow to 45 centimetres. Can they find any depictions of the seadragon in the book that are roughly this size? Why did the artist draw the seadragon in many different sizes?

Activities

Science activities

Design an aquarium

You will need

- A3 paper
- Coloured sticky notes
- Coloured media (crayons, texters, pencils etc.)
- Scissors (optional)

What to do

Use an A3 sheet of paper to represent a tank. Invite the students to draw representations of the kinds of things they might want to purchase for an aquarium (such as pebbles, coral, air pump, or different marine life, etc.) on coloured sticky notes. They can cut these out with scissors if they wish to make them stand out.

Ask them to discuss what is essential to keeping things alive, and what things are just nice to look at.

Hide and find

You will need

- Green coloured tokens or objects (discs, small fluffy balls ... feel free to mix it up!)
- Red coloured tokens or objects
- Yellow coloured tokens or objects
- A large grassy field
- A stopwatch

What to do

1. Spread a mix of the coloured objects around a large open space. Try to match the colour of one of the objects (such as green) with the shade of the surface (such as grass).
2. Bring the class out to sit to one side of the field. Select two students who will be 'predators'. Their job is to find as many objects in the area as possible within an appropriate time limit, such as 40 seconds.
3. Examine the objects they find. What are the most common colours? If they're different materials, which are the most common sizes and shapes? Discuss why this might be the case, encouraging the students to think about how easy the objects might be to see in the surroundings.

Teacher Notes

Seadragon disco

You will need

- Music!

What to do

1. Line up students randomly to face each other in pairs.
2. Nominate one line as the dancer, and the other line as the mirror.
3. Explain to the students that you will play the music for 10 seconds. The dancer will dance, and the mirror will need to copy their moves as closely as possible. You will watch for those who match their partner's moves, and choose them to stay for round 2. Feel free to remove any dancers who make it too hard for their mirror.
4. Recombine the class each round, mixing up the group so different lines are dancer and mirror. Run the disco for three rounds.
5. Discuss with the class after why seadragons might dance to pick mates to have families with.

Eco-excursion

Arrange for an excursion to examine rock pools by the seaside or an aquarium centre.

Discuss prior to the excursion what the students hope to see in the rock pools. Before going, research the types of living and non-living features common in the environment. While students probably won't see any weedy seadragons, discuss the characteristics plants and animals might need to survive in a seaside environment.

English activities

Just the facts (mostly)

Discuss with the students what the difference might be between a fact and a value or personal opinion. Use an example, describing facts as things people can agree on, such as numbers and descriptions, while personal opinions are about how somebody might feel, or what they might find valuable.

Read through *The Way of the Weedy Seadragon* with the class once. Ask them to list some facts they learned. Write these down with them, and then ask them to provide an opinion on these facts.

Encourage them to imagine themselves in the place of a seadragon, or a predator, and ask them how their opinion might change.

Weedy seadragon crossword

Share with the students an example of a crossword if they've never seen one before. Show them how it works, with clues linking to words in a grid-like pattern.

Teacher Notes

Use grid-paper to provide a template for the students to make their own crossword, using the glossary at the back of the book. For younger students, or those who are new to crosswords, suggest they pick five or six words to combine, or even just list in boxes they circle with an appropriate number of letters. Once they have completed it, ask them to share their crossword (with clues from the glossary) with other students.

Arts activities

Colour of water

You will need

- Large sheets of paper (A4 or larger)
- Paint brushes with soft bristles
- Water colours (as an alternative, feel free to water down acrylic or gouache media)
- Protective garments
- Containers with water

What to do

Invite students to create their own underwater scenes using water colour paints.

Explain how water colours and water-based paints can be diluted to create varying intensities of media. Encourage the students to experiment with the hues and intensities of their painting, adding water or paint to change the look of an image.

Teacher Notes

Worksheet

Provide students with a copy of the following diagram, and ask them to label the fish (they can refer to the labels in the diagram of the weedy seadragon towards the back of the book). Once they have done this, instruct them to colour their fish to resemble an actual weedy seadragon. As an extension, provide them with a second sheet and ask them to colour it differently, so it can be camouflaged in a different environment.

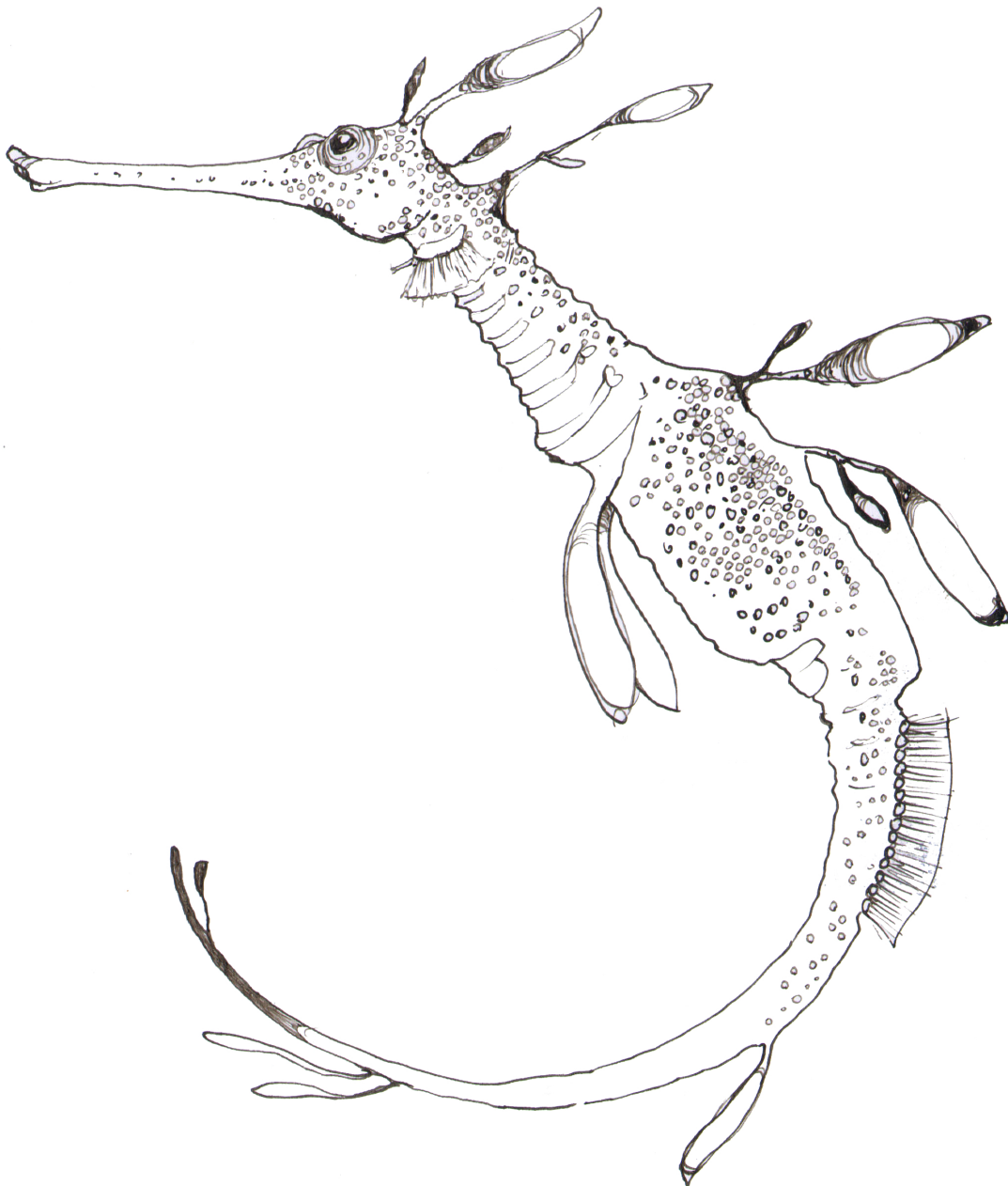


Image © Lois Bury

Teacher Notes

Australian curriculum links

Year level	Learning area: Science	Other learning areas
Year 2	<p>Science Understanding: Biological sciences</p> <ul style="list-style-type: none"> Living things grow, change and have offspring similar to themselves (ACSSU030) 	<p>English</p> <ul style="list-style-type: none"> Understand that spoken, visual and written forms of language are different modes of communication with different features and their use varies according to the audience, purpose, context and cultural background (ACELA1460) Understand that nouns represent people, places, concrete objects and abstract concepts; that there are three types of nouns: common, proper and pronouns; and that noun groups/phrases can be expanded using articles and adjectives (ACELA1468) <p>Media Arts</p> <ul style="list-style-type: none"> Explore ideas, characters and settings in the community through stories in images, sounds and text (ACAMAM054)
Year 3	<p>Science Understanding: Biological sciences</p> <ul style="list-style-type: none"> Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044) 	<p>English</p> <ul style="list-style-type: none"> Understand that languages have different written and visual communication systems, different oral traditions and different ways of constructing meaning (ACELA1475) Identify the effect on audiences of techniques, for example shot size, vertical camera angle and layout in picture books, advertisements and film segments (ACELA1483) <p>Media Arts</p> <ul style="list-style-type: none"> Investigate and devise representations of people in their community, including themselves, through settings, ideas and story structure in images, sounds and text (ACAMAM058)
Year 4	<p>Science Understanding: Biological sciences</p> <ul style="list-style-type: none"> Living things have life cycles (ACSSU072) Living things depend on each other and the environment to survive (ACSSU073) 	<p>English</p> <ul style="list-style-type: none"> Understand differences between the language of opinion and feeling and the language of factual reporting or recording (ACELA1489) Understand that the meaning of sentences can be enriched through the use of noun groups/phrases and verb groups/phrases and prepositional phrases (ACELA1493) Explore the effect of choices when framing an image, placement of elements in the image, and salience on composition of still and moving images in a range of types of texts (ACELA1496) <p>Media Arts</p> <ul style="list-style-type: none"> Investigate and devise representations of people in their community, including themselves, through settings, ideas and story structure in images, sounds and text (ACAMAM058)
Year 5	<p>Science Understanding: Biological sciences</p> <ul style="list-style-type: none"> Living things have structural features and adaptations that help them to survive in their environment (ACSSU043) 	<p>English</p> <ul style="list-style-type: none"> Understand how texts vary in purpose, structure and topic as well as the degree of formality (ACELA1504) Explain sequences of images in print texts and compare these to the ways hyperlinked digital texts are organised, explaining their effect on viewers' interpretations (ACELA1511) <p>Media Arts</p> <ul style="list-style-type: none"> Explore representations, characterisations and points of view of people in their community, including themselves, using settings, ideas, story principles and genre conventions in images, sounds and text (ACAMAM062)

Teacher Notes

Related books from CSIRO Publishing

The Forest in the Tree (2020)

Ocean Animals (2020)

Windcatcher (2019)

The Squid, the Vibrio and the Moon (2019)

The Great Lizard Trek (2018)

Other CSIRO resources

CSIRO has developed and delivered a broad range of high-quality STEM education programs and initiatives for nearly 40 years. Our programs aim to inspire the pursuit of further STEM education among students and the community, to equip the emerging workforce with tomorrow's skill sets, and to strengthen collaboration between industry and classrooms across Australia. For more information visit: <https://www.csiro.au/en/Education>