

Exploring Binomial Names

YEAR 5 AND 7
BIOLOGICAL SCIENCES



QGC

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Future Makers is an innovative partnership between Queensland Museum Network and Shell's QGC business aiming to increase awareness and understanding of the value of science, technology, engineering and maths (STEM) education and skills in Queensland.

This partnership aims to engage and inspire people with the wonder of science, and increase the participation and performance of students in STEM-related subjects and careers — creating a highly capable workforce for the future.

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ENGAGE - EXPLORE

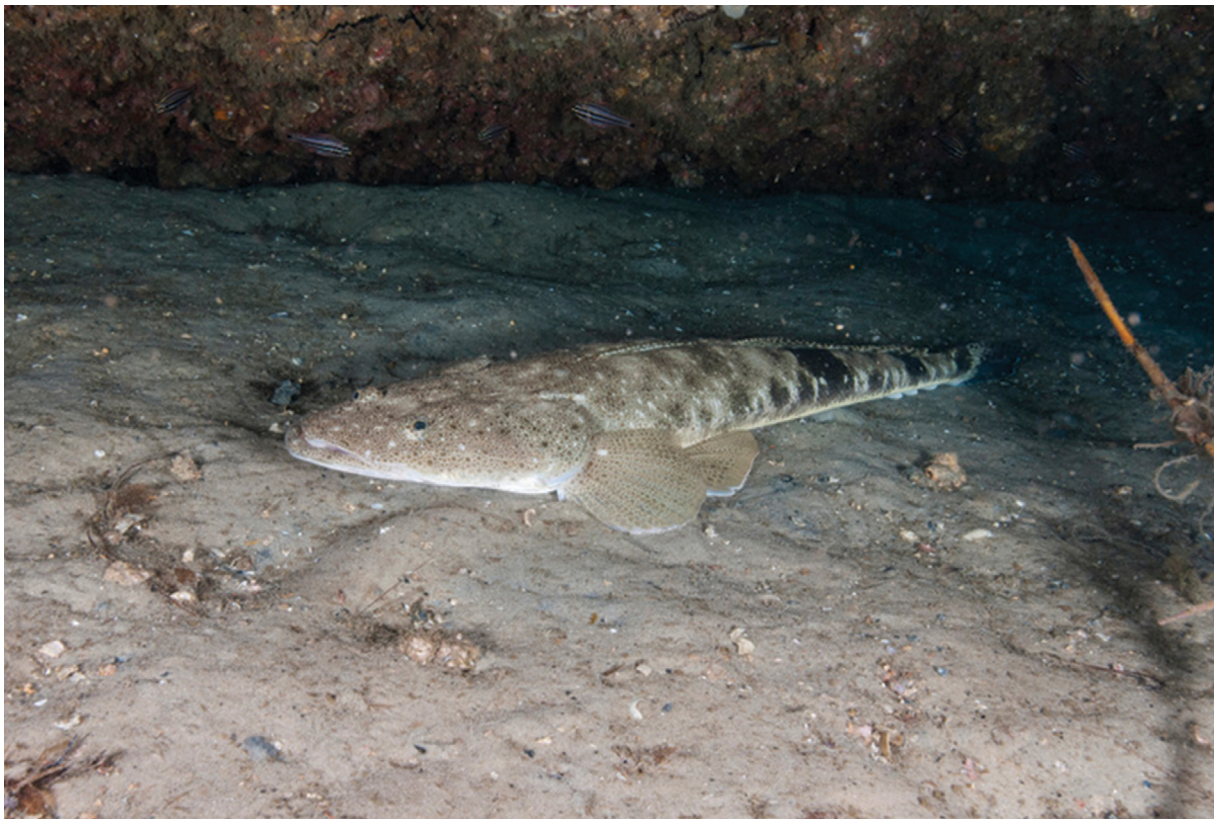
Exploring Binomial Names

Teacher Resource

The scientific process of naming any life form involves assigning each species a unique two word scientific or binomial name. The first word is the generic name (genus) and the second is the species name. The author or describer of a species is the first person to publish the description and species name in a recognised manner, according to rules set out in the [International Code of Zoological Nomenclature](#). At any one time, there can only be a single valid scientific name for a species. However, some species may have inadvertently been named more than once. When this occurs, the oldest name generally has priority and others are regarded as junior synonyms, which are not used to identify the species.

The binomial name of a species is usually presented in Latin or Greek, and often relates to a distinctive aspect of its body form. For every binomial name, the genus must be capitalised and the entire name must be written in italics.

For example, the Dusky Flathead's scientific name is *Platycephalus fuscus*. The genus (*Platycephalus*) is derived from the Latin *platy*, meaning flat and *cephalus*, meaning head. The species name, *fuscus*, refers to this fish's dusky, or dark, colouration.



Dusky Flathead, *Platycephalus fuscus*. Queensland Museum, Gary Cranitch.

However, some scientists choose to have a little fun when naming new species. For example, Dr Paul Oliver, Senior Curator of Vertebrates at Queensland Museum, recently described a new species of frog, *Litoria vivissimia*. When talking about how the frog was named, Dr Oliver stated, “*Litoria vivissimia* translates to 'cheeky monkey' - we have probably walked past dozens of them but have only ever seen one. We think they are probably up there in treetops laughing at us.”¹



Litoria vivissimia. Image credit: Stephen Richards

This activity is designed to:

- Expose students to binomial names, what they look like and how they sound; and,
- Investigate how Latin and/or Greek has been used to structure these names.

Detailed step-by-step instructions for this activity can be seen below. It is recommended that you use these instructions to guide your students through the activity.

1. Divide students into groups of two or three. Distribute animals to students. Provide students with time to closely observe each animal and to discuss the following questions in their groups:
 - Do you recognise any of these animals?
 - What are their common names?
 - Where have you seen these animals? When?
 - What do you already know about these animals?

- Distribute binomial names and the worksheet, *Exploring Binomial Names: Greek and Latin Roots*. Ensure the worksheet is placed face down on students' tables. Provide students with time to look at and practise pronouncing each binomial name.
- Introduce learning task: to match the binomial name to the correct animal species. Ask students to turn over the provided worksheet. Inform students that they can use this table of useful Greek and Latin root words to help them complete the task. Remind students that the Greek and Latin root words will only form part of the binomial name, but these small clues should provide them with enough information to match a binomial name to its animal. Students may like to circle, underline or highlight the Greek or Latin roots within the binomial name when they have been found. Provide students with time to complete the activity, before asking students to share and justify their decisions. See below for answers:

Red Kangaroo	<i>Macropus rufus</i>
Leatherback Turtle	<i>Dermochelys coriacea</i>
Green Treefrog	<i>Litoria caerulea</i>
Platypus	<i>Ornithorhynchus anatinus</i>
Bearded Dragon	<i>Pogona barbata</i>
Southern Blue-ringed Octopus	<i>Hapalochlaena maculosa</i>

- Students then work independently or in small groups to apply their knowledge and create a binomial name for a mythical creature, using their list of Greek and Latin root words. Students can share the creature and the name they devised with the class. Alternatively, students could play a guessing game where they only read out the devised name and the rest of the class determines which creature belongs to the name based on the Greek and/or Latin roots used.

This activity could also be extended to identifying:

- Where the mythical creatures may live based on their observed features.
- How these features help the mythical creatures survive in their environment/s.
- How to classify these creatures and/or the making of a dichotomous key.

Curriculum Links

Science

YEAR 5

Science Understanding

Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)

Science Inquiry Skills

Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (AC SIS093)

YEAR 7

Science Understanding

Classification helps organise the diverse group of organisms (ACSSU111)

Science Inquiry Skills

Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (AC SIS133)

General Capabilities

Literacy

Word knowledge

Exploring Binomial Names

Student Activity

Animals







Binomial Names

Macropus rufus

Dermochelys coriacea

Litoria caerulea

Ornithorhynchus anatinus

Haplochromis maculosa

Pogona barbata

Macropus rufus

Dermochelys coriacea

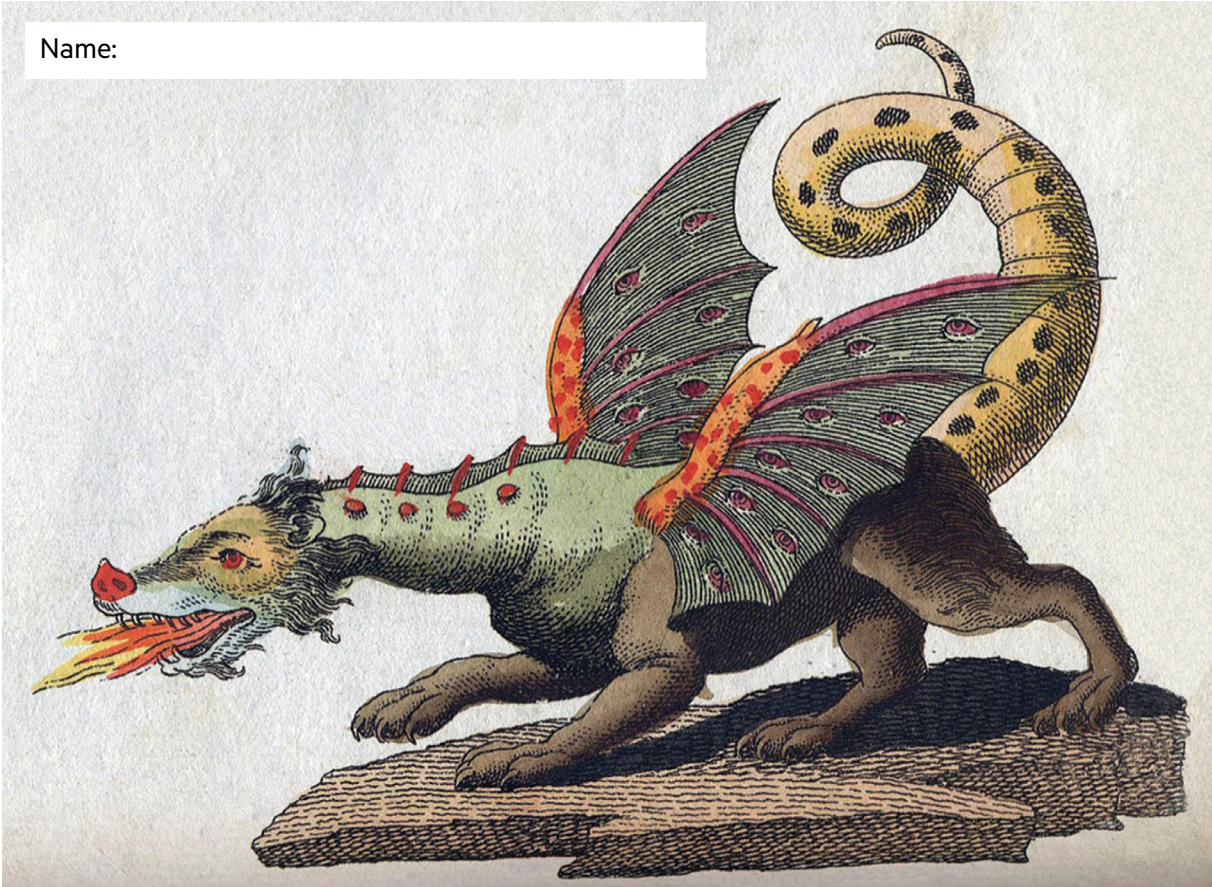
Litoria caerulea

Ornithorhynchus anatinus

Haplochromis maculosa

Pogona barbata

Mythical Creatures





Name:

Exploring Binomial Names

Student Activity

Latin and Greek Root Words

Numbers		
Greek	di	two
	hex	six
Latin	quad	four
	mult	many

Colours		
Greek	xanth	yellow
	chlor	green
	melan	black
Latin	rufus	red
	caeruleus	blue
	alb	white

Description		
Greek	macro	large
	micro	small
	chelys	tortoise
	ornith	bird
	pogon	beard
	acantha	thorn
	dasy	shaggy
Latin	corium	leather
	anas	duck
	maculosus	spotted
	volans	flying
	punctata	dotted
	ruga	wrinkled
	crispus	curled
	curvi	curved
	luna	moon
	macula	spot
	sagitt	arrow

Body Parts		
Greek	dermo	skin
	rhynchus	bill
	poda	foot
	uro	tail
	rhino	nose
	ptera	wing
Latin	penna	feather
	pede	leg
	dentata	toothed