

Stage 2 Geography
The Earth's Environment

Outcomes:

1. **GE2-1** examines the features and characteristics of places and environments
2. **GE2-2** describes the ways people, places and environments interact
3. **GE2-3** examines differing perceptions about the management of places and the environment

Student Name: _____

Case Study: Penrith Lakes



Key Questions:

1. What makes Penrith Lakes a good place for recreation, e.g. picnics, canoeing, walking tracks?

2. What makes Penrith Lakes a good place for wildlife (reptiles, birds, mammals, fish, amphibians and invertebrates)?

Water Testing

Is the water clean?















Test	Result	Water Rating	
Phosphate/Plant Food (use tablet in yellow container - time for 5 minutes)	ppm	Excellent: < 1 Fair: 3	Good: 1 - 2 Poor: 4
pH/Acidity (use blue box - time for 1 minute)		Excellent: 6.5 - 8.5 Poor: < 5 (acidic) <u>OR</u> > 9 (alkaline)	Good: 5.0 - 6.4 <u>OR</u> 8.6 - 9.0
Water Clarity Clear/Muddy (use 2 piece tube - join together)	NTU	Excellent: <10 Fair: 21-30	Good: 10-20 Poor: >30
Temperature (use white instrument)	°C	Good: <u>summer</u> 20-30; <u>autumn/spring</u> 15-25; <u>winter</u> 10-20 Poor: <u>summer</u> >30; <u>autumn and spring</u> <15 or >25; <u>winter</u> >20	
Salts (use green instrument)	ppm	Excellent: < 500 Fair: 501 - 1,500	Good: 500 - 1000 Poor: >1,500

What is the water testing rating for water quality? **Tick your result.**

Excellent	
Good	
Fair	
Poor	

Bird Observations

What aquatic birds can you find? **Circle the score.**

Bird	Picture	Score	Bird	Picture	Score
Australian Grebe		5	Swan		5
Darter		5	Black Cormorant		3
Egret (white)		5	Pied Cormorant (white chest)		3
Heron (grey)		5	Dusky Moorhen (red beak)		3
Pelican		5	Eurasian Coot (white beak)		3
Royal Spoonbill		5	Purple Swamphen		3
Black Winged Stilt		5	Duck		2
Other: _____		5	Other: _____		5









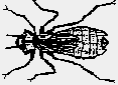








Total Point Score: _____

What is the aquatic bird rating for water quality? **Circle the score and rating.**

Total Point Score	Water Quality Rating
5 - 10	Poor
11 - 16	Fair
17 - 24	Good
25 or more	Excellent

Dipnetting

What aquatic invertebrates can you find? **Write the score for each water bug.**

Invertebrate	Picture	Score	Invertebrate	Picture	Score
Bloodworm			Mosquito Fish		
Backswimmer			Pond Snail		
Caddisfly Larvae			Waterboatman		
Damselfly Nymph			Water Beetle		
Dragonfly Nymph			Water Mite		
Freshwater Shrimp			Water Treader		
Giant Water Bug			Water Scorpion		
Leech			Water Spider		
Mayfly Nymph			Other:		

What is the aquatic invertebrate (water bug) rating for water quality?

Progressive point score for water quality:

1 2 3 4 5 6 7 8 9 10
Poor

11 12 13 14 15 16
Fair

17 18 19 20 21 22 23 24
Good

25 26 27 28 29 30
Very Good

31 32 33 34 35 36 37 38 39
Excellent

40 41 42 43 44 45
Wow