Water and soil: game sheet and water budget.

Name: Class: Date:

Fill in one box after each round. Give numbers, and say where each one comes from, for example (Bureau of Meteorology) or (DEW). The water budget on page 3 is for your own district, and the last box goes with screen 8.

ROUND 1 Renewable, but how fast?

a **When is a store of water or soil sustained, and when is it diminished?**

b **Adelaide's reservoirs hold _____ GL and capture about _____ GL a year. If they supplied all 166 GL a year, they would run dry in about _____ years.**

c **Three resources and how long they take to replenish:**

RESOURCE	TIME TO REPLENISH	SOURCE

ROUND 2 The Great Artesian Basin

a **From the model:**

YEAR	BORES FLOWING	FLOW (ML A DAY)	PRESSURE (M ABOVE GROUND)	SPRINGS FLOWING
1910				
1999				
2030, my plan				

b **Share of bores I capped: _____%. What happened to the pressure and the springs by 2030?**

c **What do the sources say about how long the basin takes to recover? How does the rate of use change it?**

ROUND 3 Sea water under the coast

a The 1:40 rule: with the water table _____ m above sea level, fresh water reaches about _____ m below sea level, because

b What made the town bore turn salty, and what kept it fresh in the dry decade?

c Uley South: one piece of evidence, and the decision that was made.

ROUND 4 Trace the pollution

a Three activities that pollute groundwater:

ACTIVITY	RURAL, URBAN OR INDUSTRIAL	WHAT IT ADDS TO GROUNDWATER

b How I traced one bore to its source, using the contours and the chemical:

c One real case in South Australia, and why the pollution lasts:

ROUND 5 Water for a city

a Where Adelaide's water came from (Bureau of Meteorology):

YEAR	RESERVOIRS (GL)	RIVER MURRAY (GL)	DESALINATION (GL)
2017–18			
2018–19			
2024–25			

b The five steps of Salisbury's stormwater scheme, and how they keep the gulf cleaner:

c One advantage and one limit of the desalination plant:

ROUND 6 Soil and salt

a On a ploughed field, soil is lost at about _____ mm a year and forms at about _____ mm a year, so it is lost about _____ times faster than it forms.

b In the model, salt reached the surface _____ years after clearing. What did replanting the upper slope change?

c Explain how clearing deep-rooted plants causes dryland salinity.

WATER BUDGET Rain on a roof near you

a Nearest rainfall station (Bureau of Meteorology, Climate statistics): _____ Mean rainfall: _____ mm a year

b Roof area that drains to a tank: _____ m long × _____ m wide = _____ m^2

c Rain on the roof each year = area × rainfall = _____ litres (1 mm on 1 m^2 gives 1 litre)

d After losses such as evaporation and overflow, × 0.7 = _____ litres = _____ kL

e Water a household uses in a year: _____ kL (from a water bill, or use 210 kL, the Adelaide average for 2024–25)

f Share of the household's water the roof could supply: (d ÷ e) × 100 = _____%

g Where does your district's mains water come from? Would a rainwater tank make your household's water supply more sustainable? What else would you need to know?

TOGETHER Sustained or diminished?

Choose one water or soil resource from the game. Is it being sustained or diminished? Use how much there is, how fast it is replenished and how fast it is used, with numbers and sources. Say what could change the answer.