Minerals, soil and dating: mastery record.

Name: Class: Date:

Record each mastery check as you take it. You need 4 out of 5 to master a unit. If you score less, write down what you needed to fix before you take the other form.

ALL UNITS My mastery record

a **Write your score for each form you take, the date you mastered the unit, and what you fixed.**

UNIT	FORM A	FORM B	MASTERED ON	WHAT I NEEDED TO FIX
1 What is a mineral?				
2 Identifying and using minerals				
3 Rocks				
4 Soil				
5 Relative ages				
6 Absolute ages				
7 Carbon-14				
8 Putting it together				

b **The unit I found hardest, and what helped me master it:**

SCREEN 3 Test bench: real specimens

a **Test each specimen your teacher gives you. Use a fingernail (about 2.5), copper wire (about 3.5) and a steel blade or glass (about 5.5) for hardness.**

SPECIMEN	COLOUR AND LUSTRE	STREAK	HARDNESS	CLEAVAGE OR FRACTURE	OTHER TESTS	MINERAL
A						
B						
C						
D						
E						
F						

b **Which test was the most useful for telling your specimens apart, and why?**

SCREEN 3 Uses follow properties

a **Choose one mineral you tested. What is it used for, and which property makes it useful?**

SCREEN 7 Half-life practical

a **Start with 100 coins. Each throw stands for one half-life: tip the coins out, take away every coin that lands heads (these atoms have decayed), and count the coins left. Repeat until none are left or you reach 6 throws.**

THROWS (HALF-LIVES)	COINS LEFT (PARENT)	COINS TAKEN AWAY (DAUGHTER)	EXPECTED LEFT
0	100	0	100
1			50
2			25
3			12.5
4			6.25
5			3.1
6			1.6

b **Plot coins left against throws, and draw the expected curve on the same axes.**

SCREENS 7 AND 8 Using the curve

a **Why do your results not match the expected numbers exactly? How could you make them closer?**

b **A shell has 25% of its carbon-14 left. The half-life is 5,730 years. How old is it? Show your working.**