

Dinosaur Practice Problem: Key for Steps 5 and 6

Step #5: Determine which character states are ancestral and which are derived using outgroup data.

	<u>Ancestral</u>	<u>Derived</u>
1. armored plates:	no	yes
2. predentary	no	yes
3. pubis ext. post.	no	yes
4. rostral	no	yes
5. skull shelf	no	yes
6. symphysis	yes	no
7. enamel	no	yes

Step #6: Fill out character matrix.

Character:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<i>Pachycep.</i>	A	D	D	A	D	D	D
<i>Parasaur.</i>	A	D	D	A	A	A	D
<i>Stegosaur.</i>	D	D	D	A	A	A	A
<i>Tricerat.</i>	A	D	D	D	D	D	D

A=ancestral, D=derived